Environmental Justice/Social Impacts Technical Report Honolulu High-Capacity Transit Corridor Project

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City and County of Honolulu

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Terms and Acronyms Used in this Document

AA	Alternatives Analysis
ADA	Americans with Disabilities Act
AIAN	American Indian and Alaskan Native
BWS	Board of Water Supply
CRA	Civil Rights Act
DEIS	Draft Environmental Impact Statement
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DP	Development Plan
DPP	Department of Planning and Permitting
DTS	Department of Transportation Services
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EPA	Environmental Protection Agency
EJ	Environmental Justice
EO	Executive Order
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HART	Honolulu Area Rail Rapid Transit
HCDA	Honolulu Community Development Authority
HDOT	Department of Transportation, State of Hawai‘i
HECO	Hawaiian Electric Company
HHCTCP	Honolulu High Capacity Transit Corridor Project
HHS	Health and Human Services
HOV	High Occupancy Vehicles
HRS	Hawai‘i Revised Statutes
HRT&L	The Honolulu Rapid Transit and Land Company
IC	Interchange
LEP	Limited English Proficient
LPA	Locally Preferred Alternative

MAGLEV	Magnetic Levitation
NEPA	National Environmental Policy Act
NHOPI	Native Hawaiian and Other Pacific Islander
OMPO	O'ahu Metropolitan Planning Organization
OR&L	O'ahu Railway and Land
ORTP	O'ahu Regional Transportation Plan
OTS	O'ahu Transit Services
PEEP	Preliminary Engineering and Evaluation Program
PIP	Public Involvement Plan
PS&E	Plans, Specifications, and Estimates
PUC	Primary Urban Center
RTP	Regional Transportation Plan
TAZ	Travel Analysis Zone
TCM	The Contemporary Museum
TAA	Transportation Analysis Area
TIP	Transportation Improvement Program
TSM	Transportation System Management
TW	Time Warner
UH	University of Hawai'i
UMTA	Urban Mass Transportation Administration

Summary

This technical report presents the results of analysis of the potential effects of the alternatives being considered for the Honolulu High-Capacity Transit Corridor Project on neighborhoods and communities. The umbrella term "neighborhoods and communities" addresses such topics as displacement and relocation, community setting, population and demographics (including environmental justice), local businesses and employment, public services, community facilities, recreation resources, utilities, and community cohesion.

Affected Environment

Communities along the project corridor include Kapolei, the 'Ewa area, Waipahu, Salt Lake, Kalihi, Downtown Honolulu, Kākā'āko, McCully/Mo'ili'ili, the University District, Pearl City, 'Aiea, and Waikīkī. Kapolei is located at the western end of the 'Ewa plain; much of the 'Ewa plain was previously occupied by sugar cane fields. The agricultural land is rapidly developing, and the area has been designated as O'ahu's "second city." As the corridor extends Koko Head (eastward) from the 'Ewa plain, land uses become more urbanized. The corridor traverses through sugar plantation worker communities that date from the late 19th-century; single-family bedroom communities; suburban cities with low-rise mixed residential and commercial/industrial uses; and ultimately, the dense high-rise residential apartments, condominiums, commercial, and office developments of Downtown Honolulu. As the corridor extends Koko Head of downtown it passes through urban mixed residential, commercial, resort, and university communities. Major institutions include several military bases and associated enlisted-persons housing, Aloha Stadium, several regional retail and commercial shopping centers, Honolulu International Airport, and major industrial and port businesses. The corridor includes Waikīkī, one of the densest tourist areas in the world, and the University of Hawai'i at Mānoa with an enrollment of more than 20,000 students.

The population of the Island of O'ahu was more than 876,000 people in 2000 according to the census. This was an increase of 4.8 percent over the previous decade. The fastest growing areas were the suburban communities where residents could find more affordable housing. Between 2000 and 2030, the population of the island is expected to increase 28 percent to more than 1.1 million. Based on local land use planning policies, this future population growth will be focused in the 'Ewa and Primary Urban Core areas.

Like many of the country's largest metropolitan areas, the demographic characteristics of O'ahu are increasingly more diverse, particularly as a result of the Native Hawaiians and Polynesians originally inhabiting the island. In 2000, 79 percent of the population was non-White, with 46 percent Asian. Key racial groups included Native Hawaiians, Filipinos, Samoan, Japanese, and Chinese. Large concentrations of White and Black persons were in close proximity to the military bases, which is typical of temporarily stationed military personnel.

The median income in 1999 was $52,280; however, that number represents limited purchasing power because of the high cost of living in Hawai'i. Ten percent of the population had an income below the poverty level. Neighborhoods with concentrations of residents below the poverty level included Downtown Honolulu, Kalihi-Pālama, and the Kalihi Valley which contains low-income housing, a disproportionate number of elderly, and many new immigrants. Seven percent of households received public assistance and 22 percent and 27 percent receive income from retirement and social security, respectively. Only 49 percent of the dwellings are owner-occupied, but 55 percent are single-family residences.

Honolulu is the center of commerce for all of Hawai'i and Polynesia. It is a world-renowned tourist destination that contributes considerably to the local economy. It is the state capital. The metro area provides regional medical services, shopping, and education. The area has several military bases, substantial industrialized maritime business activity, and an international airport. The project corridor encompasses many outlying communities where old sugar refineries have been converted to shopping centers and industrial parks in the past 10-15 years. These suburban communities have smaller commercial areas and neighborhood shopping districts that meet the everyday needs of both residents and visitors.

Major employment centers along the project corridor include the following:

- Kapolei
- Pearl Harbor and the nearby industrial area
- Pearlridge Center
- Honolulu International Airport and supporting businesses
- Industrial districts in Hālawa Valley, Māpunapuna, Kalihi Kai, Sand Island, Iwilei, and Kaka'ako
- Downtown Honolulu and the Capital District
- Ala Moana Center and surrounding area
- Waikīkī
- University of Hawai'i at Mānoa.

Many public services and community facilities are located in the project corridor, such as fire, police, and emergency medical services. Also present are public health clinics, hospitals, senior centers, schools, colleges, universities, libraries, religious institutions, and cemeteries. Together, they support the social fabric of the community's needs.

Despite the urban character of much of the project corridor, natural areas, parks, and other types of recreational amenities are numerous. These include regional recreation areas for picnicking and hiking, ocean beaches, developed facilities such as recreation centers and golf courses, neighborhood parks for local residents and children's organized sports programs, as well as small urban parks. In addition, there are meandering pedestrian and bicycle trails. Major facilities include Hawaiian Waters Adventure Park, Aloha Stadium, Ke'ehi Lagoon Beach Park, Ala Moana Regional Park, Stadium Park,

and the University of Hawai'i Stan Sheriff Sports Center. These amenities provide a variety of recreational opportunities.

A substantial portion of the project corridor encompasses urban areas served by a number of different utilities. These include electric, water, sewer, stormwater, telephone, cable, and fiberoptics. There are underground natural gas lines in the study corridor and there are fuel lines to the military bases and airport. Most of these facilities include buried cables, conduits, or pipelines, either in the public right-of-way or on separate rights-of-ways or easements. There also are facilities with buried or above-ground structures such as electric substations or telephone switching stations. In addition, a number of major high-voltage power lines are in the project corridor.

Cohesion is provided by many social settings and activities in the project corridor. In the 'Ewa end of the corridor, sugar plantation history is an important part of the community's cultural history and present social fabric. Downtown Honolulu contains the long-established communities such as the Chinatown District. At the State capital, there is a special Hawaiian lei draping ceremony for Father Damien's Birthday, Queen Lili'uokalani's birthday, and Kamehameha Day (a State Holiday). The 'Iolani Palace, in the Capital District, hosts commemorative gatherings for the Native Hawaiian community. Certain neighborhoods and communities celebrate special cultural events such as the Prince Lot Hula Festival at Moanalua Gardens. Other social activities include ethnic rituals, including the Japanese, Okinawan, and Buddhist ritual Bon dances to commemorate the dead and special community holiday events, such as the annual Kalihi Christmas parade. In addition, there are multi-cultural celebrations for Mardi Gras, the Chinese New Year, and St. Patrick's Day. Community gathering places include low-key neighborhood farmers' markets and movie nights at local beaches. Community identity is strengthened by the many cultural practices (see *Cultural Resources Technical Report*). All of these attributes contribute to neighborhood and community cohesion along the project corridor.

Impacts

Alternative 1: No Build Alternative

The No Build Alternative would not include new construction, other than what has already been planned and approved; therefore, the project would not affect neighborhoods and communities. It would not cause displacements, provide new access nor affect parklands, utilities and services in the corridor. Long-term impacts would include increased congestion on surface streets, which would impact the operating environment for fire, police, and emergency medical service vehicles and access to some community facilities. General public service vehicles such as school buses and solid waste collection trucks would also experience delays caused by increased congestion.

Alternative 2: TSM Alternative

Parklands, Services, Public Safety, and Utilities

The TSM Alternative would provide an enhanced bus system based on a hub-and-spoke route network, conversion of the present morning peak-hour-only zipper-lane to both a morning and afternoon peak-hour zipper-lane operation, and other relatively low-cost bus priority capital improvements on selected roadway facilities, as well as include the completion of projects defined in the O'ahu Regional Transportation Plan that are also included in the No Build Alternative. Limited transportation improvements and the enhanced bus system with Alternative 2 would improve transit service compared to the No Build Alternative. These improvements would have a small effect on community facilities and parklands by increasing accessibility. Construction impacts on utilities and public safety are expected to be minor. Additional right-of-way requirements for new transit centers, park-and-ride lots and bus maintenance facilities have not yet been identified, but they would be less than the requirements for Alternatives 3 and 4.

Environmental Justice

Projects included under the No Build Alternative would undergo planning and environmental review as part of their individual project development process. Limited transportation improvements and the enhanced bus system with Alternative 2 would improve traffic operations on corridor roadways. These improvements would benefit low income and/or minority communities by increasing accessibility to these communities.

Displacements and Relocations

Under this alternative, the existing bus system would be enhanced. Enhancements would involve changes to existing operations and frequencies of service, and would not require additional right-of-way. Additional right-of-way requirements for new transit centers, park-and-ride lots and bus maintenance facilities have not yet been identified, but they would be less than the requirements for Alternatives 3 and 4.

Community Cohesion

Communities would be served by the enhanced bus system. No long-term impacts on community cohesion are expected to occur.

Construction Impacts

Construction of bus-enhancement facilities could affect low income and/or minority communities if such facilities are located in or adjacent to those communities; however, impacts such as noise or dust from construction activities would be temporary and would be minimized and monitored through the use of Best Management Practices (BMPs) such as construction scheduling or dust control measures, if necessary. Traffic impacts during construction would be managed through the implementation of Traffic Management Plans.

Alternative 3: Managed Lane Alternative

Services, Public Safety, and Utilities

The number of parcels supporting community and utility facilities that would be directly affected is shown in Table S-1. Overall, the introduction of a two-lane grade-separated facility between Waipahu and Downtown Honolulu would have effects similar to the Fixed Guideway Alternative. However, the scale and intensity of impacts would be less.

Parklands

The Managed Lane Alternative is anticipated to affect one public park, Waiawa District Park, and one recreation facility, Aloha Stadium (Table S-1). The project would require additional right-of-way at the Waiawa District Park and Aloha Stadium; however, these resources would not require relocation. Access to the facilities would be maintained. Parking may be permanently acquired at Aloha Stadium. The Navy-Marine Golf Course would also be impacted through partial acquisition by the project; however, this facility is not considered a public resource.

Displacements and Relocations

Up to 49 adjacent parcels could be affected by parcel acquisition under this option (see Table S-1). Of this total, 2 parcels have been identified as residential and as many as 47 parcels with commercial/office and other uses would be affected. Where buildings are located on the affected parcels, displacements could occur. Because no full parcel acquisitions would be needed for this option, it is expected that few, if any, building displacements would take place.

Two parcels where residential uses occur would be affected by right-of-way acquisition for both of the options for this alternative. Parcels affected by right-of-way acquisition may include condominium or apartment buildings where multiple dwelling units could be affected, as well as single-family homes. Therefore, this alternative may result in a slight reduction in housing in the project area.

Environmental Justice and Transit-Dependent Communities

The acquisition of commercial and residential uses may have a disruptive influence on a community. According to Table S-1, within communities with a concentration of low income or minority residents, approximately 21 parcels may be potentially affected by partial right-of-way acquisition for the Two-Direction Option for the Managed Lane Alternative. Approximately, 17 parcels may be affected by partial right-of-way acquisition for the Reversible option. This impact would be minimized through the maintenance of access to parking and other community amenities to these communities. Partial acquisition of properties would not displace businesses or residences in these communities.

Table S-1. Summary of Impacts by Alternative

Alternative	Parcels of All Types[1]	Residential Parcels	Commercial/ Office Parcels	Community Facilities[2]	Utility Facilities[3]	Park/ Recreational Areas	Parcels Directly Affected in EJ Communities		Transit Service to EJ Communities[5]	Total User Benefit to EJ Communities[6]	Transit Service to Transit-Dependent Communities[5]	Total User Benefits to Transit-Dependent Communities[6]
							Total[4]	Residential				
Alternative 1: No Build												
Alternative 1: No Build	0	0	0	0	0	0	0	0	53,881	N/A	53,881	N/A
Alternative 2: TSM												
Alternative 2: TSM	Not Identified								56,477	N/A	56,477	N/A
Alternative 3: Managed Lane												
3a. Two-Direction Option	49	2	30	0	2	2	21	1	57,335	215,887	57,413	102,873
3b. Reversible Option	44	2	29	0	2	2	17	1	57,577	232,064	57,055	81,205
Alternative 4: Fixed Guideway (full-length system by section)												
I. Kapolei to Fort Weaver Road												
Kamokila Boulevard/Farrington Highway	22	0	3	1	2	1	2	0	42,511	631,844	2,280	17,322
Kapolei Parkway/North-South Road	19	0	0	1	2	1	2	0	21,391	326,949	1,122	7,633
Saratoga Avenue/North-South Road	35	0	0	1	2	1	2	0	22,674	387,114	1,103	6,043
Geiger Road/Fort Weaver Road	28	0	4	0	1	0	5	0	23,338	399,418	1,121	7,478
II. Fort Weaver Road to Aloha Stadium												
Farrington Highway/Kamehameha Highway	14	2	4	1	0	0	2	0	14,981	237,506	4,827	80,805
III. Aloha Stadium to Middle Street												
Salt Lake Boulevard	24	1	12	0	4	1	5	1	10,070	167,323	N/A	N/A
Makai of the Airport Viaduct	49	0	37	1	0	2	8	0	10,601	191,476	N/A	N/A
Mauka of the Airport Viaduct	33	0	20	0	1	1	15	0	10,298	172,698	N/A	N/A
Aolele Street	15	0	1	1	0	2	8	0	10,309	172,773	N/A	N/A
IV. Middle Street to Iwilei												
North King Street	37	2	6	3	0	0	29	2	8,296	63,089	7,650	62,416
Dillingham Boulevard	39	1	22	4	2	0	23	0	8,419	73,764	7,826	75,396
V. Iwilei to UH Mānoa												
Hotel Street/Kawaiaha'o Street/ Kapi'olani Boulevard	83	11	58	2	2	2	10	1	12,794	54,390	47,162	237,685
King Street/Waimanu Street/Kapi'olani Boulevard	36	9	62	2	2	0	39	1	12,589	38,940	46,707	205,662
Nimitz Highway/Queen Street/Kapi'olani Boulevard	63	8	47	1	1	0	22	0	12,722	49,786	47,109	234,712
Nimitz Highway/Halekauwila Street/Kapi'olani Boulevard	77	9	51	1	3	1	25	1	12,722	49,786	47,109	234,712
Beretania Street/South King Street	36	3	22	3	1	0	21	3	12,681	48,610	46,485	188,876
Waikīkī Branch	16	1	10	0	0	1	14	1	78	228	228	22,726

Notes:

1. Parcels of all types is greater than the sum of the other columns because it also includes parcels with governmental or utility company ownership that are not currently transportation right-of-way.
2. Includes educational services (schools and universities), police and fire station, religious institutions, and community facilities.
3. Includes refuse, water, sewer, electric, gas and telephone services.
4. Includes City owned, negotiated, or donated parcels
5. By number of daily transit trips originating in 2030 from corridor transit-dependent areas for each alignment due to implementation of Alternative 4.
6. Alternative 4: Fixed Guideway user benefits as compared to Alternative 1: No Build.

The Two-Direction Option has more opportunity of connecting communities because there are two stations associated with this option; whereas, the Reversible Option would only connect communities near the ends of the facility ('Ewa of Waiawa Interchange or Koko Head of Pacific Street) and near the Salt Lake neighborhood (from the Salt Lake Boulevard ramps). Both EJ and transit-dependent communities would receive limited positive benefits from a Managed Lane Alternative.

Community Cohesion

The Managed Lane Alternative would provide additional vehicular through capacity in an existing transportation corridor. It is not expected to have a substantial additional impact on the overall population or demographic characteristics in adjacent census tract areas, as these areas are already separated by a four-lane or wider highway. The facility would primarily be constructed within an existing highway right-of-way. The effects of the two-direction and reversible options would be the same.

Construction Impacts

Short-term construction impacts could include increased congestion on surface streets, noise, and dust during construction activities. Temporary construction easements may be required for properties adjacent to the alignment. Short-term noise and dust from construction activities would be minimized and monitored through the use of BMPs such as construction scheduling or dust control measures, if necessary. Traffic impacts during construction would be managed through the implementation of Traffic Management Plans.

Alternative 4: Fixed Guideway Alternative

Services and Public Safety

Long-term effects could involve either the physical placement of the project on or adjacent to a public service or community facility or a change in the operating environment of a public service or community facility. The number of parcels supporting community facilities that would be directly affected by physical placement is shown in Table S-1, which is organized by section with the number of affected parcels listed for each alignment option.

Overall, Alternative 4 would increase mobility and accessibility within the project corridor, providing a benefit by connecting communities. Community facilities could be adversely affected if access to these facilities is restricted.

During construction, some traffic rerouting or delays could affect fire, police, and emergency medical service vehicles and some cross streets could be temporarily closed to complete construction work. In some cases, construction requiring temporary road closures would be conducted at night or during off-peak hours to minimize traffic impacts. Construction of at-grade and elevated guideway sections in high-volume traffic and pedestrian areas could require additional police support services to direct and control traffic and pedestrian movements. Traffic rerouting or delays could also affect school bus routes and solid waste collection.

Access to community facilities near construction sites may temporarily be impeded by traffic restrictions and detours, displacement of parking or loading areas, and road closures for project construction and utility relocation. Permanent relocation of some facilities may be necessary, although the magnitude of this impact varies among alignment options.

Utilities

Long-term impacts on utility services and systems are expected to be minimal. Indirectly, the increased densities that may occur around station locations could decrease siting costs for new utilities because a compact growth pattern would be easier to serve than a more dispersed development pattern. The number of parcels supporting utility facilities that would be directly affected is shown in Table S-1.

Multiple physical utilities are located within, adjacent to, or traverse the project corridor roadways, including electric, water, sewer, stormwater, telephone, cable, and fiberoptics. These utilities may or may not be affected during construction depending on their depth below grade, soil conditions, the excavation limits, the exact location of the guideway, and other factors.

Underground utilities would be relocated or otherwise protected to allow for excavation and to minimize potential load impacts on existing utilities. Numerous utility poles supporting overhead lines may also require relocation. Some of these utility relocations may generate substantial costs, require staff time and resources, and temporary restrict access to utilities.

Generally, cut-and-cover, which is being considered for the Hotel Street/Kawaiaha‘o Street/ Kapi‘olani Boulevard Alignment, followed by at-grade construction would have the greatest impact on utility infrastructure because these methods would require more relocation of above-ground utility poles for guideways, stations, and right-of-way acquisitions. Construction of elevated sections could also require relocation of utilities. However, elevated supports often can be placed to avoid conflicts with major underground utilities and could straddle crossing roadways, thereby avoiding utilities running beneath them. Bored tunnel sections would generally pass beneath most underground utilities and would not require relocation; protection of these utilities in some cases (typically deeper sewer pipes) may be required. Disruptions to utility service during utility relocations would likely be minimal because temporary connections to customers would typically be established before relocating utility conveyances.

Parklands

Long-term impacts could involve either the physical placement of the project on or adjacent to a public park or recreational use or a change in the operating environment of a public service or community facility. The number of parcels supporting park or recreational uses that would be directly affected by physical placement is shown in Table S-1, which is organized by section with the number of affected parcels listed for each alignment option. The project would require additional right-of-way at the parks and

recreational resources; however, it is not anticipated that any of these resources would require permanent relocation.

Displacements and Relocations

The parcels that would be affected by Alternative 4 would vary according to the alignment selected within each section (Table S-1). Displacement and relocation issues for the five corridor sections are discussed in the following sections.

Section I. Kapolei to Fort Weaver Road
This portion of the route would affect up to 35 adjacent parcels. None of these parcels would require full acquisition. The Saratoga Avenue/North-South Road alignment would affect the most parcels; however, many of the parcels that would be affected are currently vacant and planned for redevelopment as part of Hawai'i Community Development Authority's Kalaeloa Master Plan. The Kapolei Parkway/North-South Road alignment would affect the fewest number of parcels.

Section II. Fort Weaver Road to Aloha Stadium
Fourteen parcels would be affected along this portion of the corridor. Five of these parcels would be acquired in full and could include building displacements.

Section III. Aloha Stadium to Middle Street
Up to 49 parcels would be affected along this portion of the corridor. The greatest number of affected parcels would occur along the Makai of the Airport Viaduct alignment, and the fewest affected parcels would occur along the Aolele Street alignment. Up to 1 of these parcels would be acquired in full and could include building displacements.

Section IV. Middle Street to Iwilei
Up to 39 parcels would be affected along this portion of the corridor. The Dillingham Boulevard alignment would affect the most adjacent parcels as a result of widening to accommodate the fixed guideway structure. As many as 25 of these parcels would be acquired in full and could include building displacements.

Section V. Iwilei to UH Mānoa
Up to 83 parcels would be affected along this portion of the corridor. The greatest number of parcels affected within this section would occur along the King Street/ Kawaiaha'o Street/Kapi'olani Boulevard alignment. The fewest affected parcels would occur along the Beretania Street/South King Street alignment. As many as 39 of the affected parcels would be acquired in full and could include building displacements.

The Waikīkī Branch would affect up to 16 parcels. No full acquisitions would occur.

Environmental Justice

The relocation or acquisition of commercial and residential uses may have a disruptive influence on a community (Table S-1). Impacts to services such as schools, community and social facilities, public services can have a disruptive affect on communities. In

Section I, no residential uses would be acquired. Kapolei Parkway/North-South Road alignment and Saratoga Avenue/North-South Road alignment would have the fewest acquisitions (2 parcels). Geiger would potentially have the greatest disruption with approximately 5 parcels to be fully or partially acquired. In Section II, Farrington Highway/Kamehameha would potentially impact 2 parcels that occurred within low income or minority communities. In Section III, Mauka of Airport Viaduct Alignment may partially acquire three commercial/industrial parcels in the Radford Terrace and Māpunapuna areas. It is unknown whether the businesses would be displaced. In Section IV, North King Street Alignment would have the greatest impact to potentially relocate businesses due to full acquisition of 11 commercial/industrial parcels. In Section V, the Hotel Street/Kawaiaha'o Street/Kapi'olani Boulevard would have the least impact to parcels that occur within low income or minority communities (full acquisition of 2 commercial parcels). The King Street/Waimanu Street/Kapi'olani Boulevard alignment would have the greatest impact by potentially requiring full acquisition of 13 commercial/industrial parcels in potential EJ communities. It is not anticipated that any displacement of residences would occur within identified EJ communities.

Both EJ and transit-dependent communities would receive positive user benefits from the Fixed Guideway Alternative, because it would provide a new fast and reliable transportation resource to those communities.

Short-term construction impacts could potentially include increased congestion on surface streets, noise, and dust during construction activities. Temporary construction easements may be required for properties adjacent to the alignment. Short-term noise and dust from construction activities would be minimized and monitored through the use of BMPs such as construction scheduling or dust control measures, if necessary. Traffic impacts during construction would be managed through the implementation of Traffic Management Plans.

Community Cohesion

The introduction of a fixed guideway transit system could both increase and decrease access through neighborhoods. Access to community services and businesses would be enhanced around stations. There would be little overall adverse effects on community cohesion and social interaction because most of the improvements would occur in existing major transportation corridors that already act as physical barriers between neighborhoods.

Experience in other cities with fixed guideway transit systems has shown that under appropriate market and regulatory conditions, a fixed guideway system can stimulate greater incentive for investment by property owners, especially near transit stations. Transit-oriented development is pedestrian-friendly, and concentrations of pedestrian-oriented businesses and services can increase social interaction within communities. Faster, more reliable and more frequent transit service can also increase access to community facilities and employment opportunities, benefiting all communities along the route.

During construction, temporary physical barriers to isolate construction sites from traffic lanes would likely restrict access across roadways. Some streets would also be partially or fully closed during certain phases of construction, hindering access and temporarily reducing community cohesion within neighborhoods.

Mitigation

Where relocations would occur, compensation would be provided to affected businesses or residents. Compensation for parcel acquisitions, including buildings and structures, would be provided at fair market value and would comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. These regulations provide for relocation services for businesses and residences and include measures for providing assistance in locating suitable replacement housing and business sites. If residences are displaced, housing relocation assistance would be provided to displaced businesses, persons, and organizations.

Federal laws require that no person be required to move from a residence unless comparable replacement property is available within that person's financial means. In addition, no displaced person, business or organization, would be required to move from any dwelling or business facility without being given a written assurance at least 90 days prior to the earliest date that they could be required to move. Relocation services would be provided to all affected property owners and tenants without discrimination.

Affected communities, public services, community facilities, and utility providers would be notified of construction activities on a continual basis to minimize the impact of disruption or rerouting of services.

Public outreach to affected communities would occur during the planning and construction phases. Where identified, multilingual publications would be produced for communities with language barriers. Interpreters would be also be available and provided upon request.

Chapter 1 Introduction

The City and County of Honolulu Department of Transportation Services (DTS), in coordination with the U.S. Department of Transportation Federal Transit Administration (FTA), has carried out an Alternatives Analysis (AA) to evaluate alternatives that would provide high-capacity transit service on O'ahu. The primary project study area is the travel corridor between Kapolei and the University of Hawai'i at Mānoa (UH Mānoa) (Figure 1-1). This corridor includes the majority of housing and employment on O'ahu. The east-west length of the corridor is approximately 23 miles. The north-south width of the corridor is at most four miles, as much of the corridor is bounded by the Ko'olau and Wai'anae Mountain Ranges to the north and the Pacific Ocean to the south.

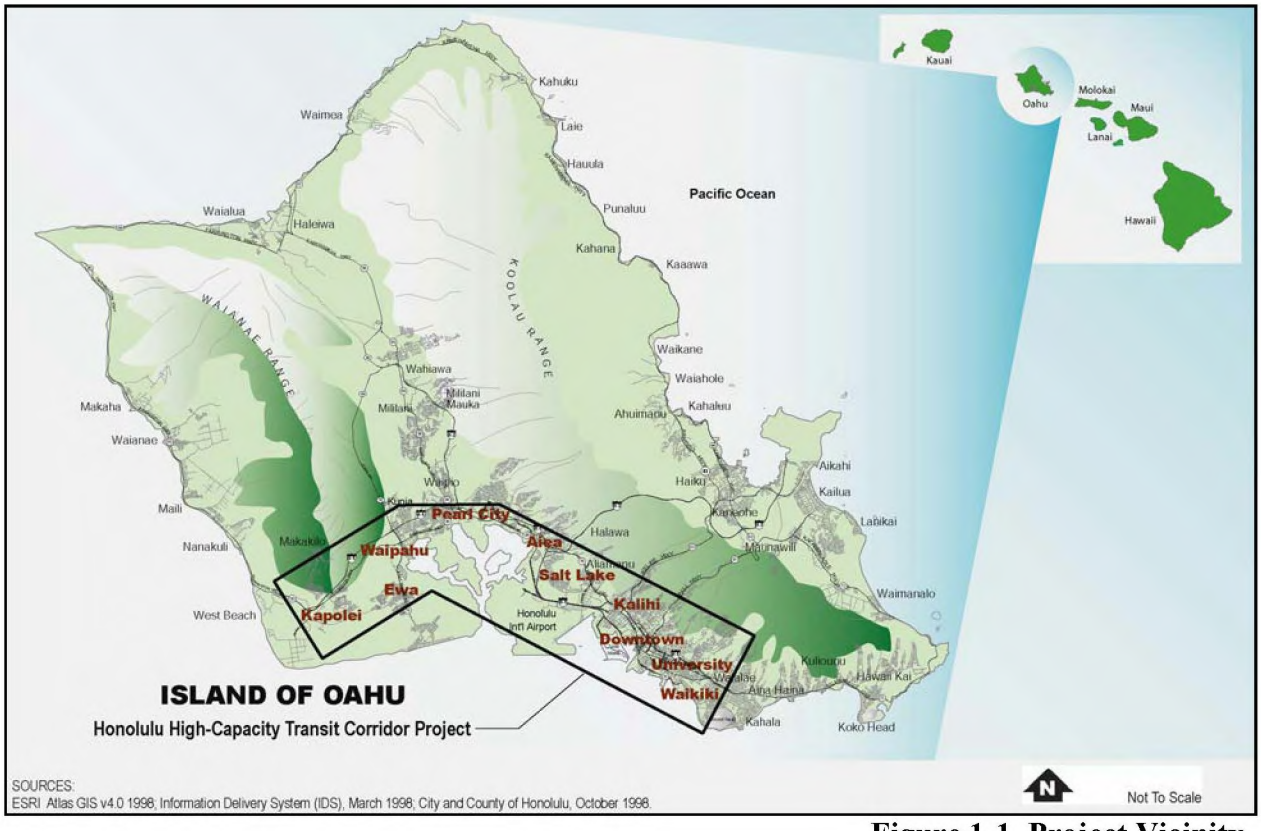

Figure 1-1. Project Vicinity

Project Description

Description of the Study Corridor

The study corridor extends from Kapolei in the west (Wai'anae or 'Ewa direction) to the University of Hawai'i at Mānoa (UH Mānoa) in the east (Koko Head direction), and is confined by the Wai'anae and Ko'olau Mountain Ranges to the north (mauka direction) and the Pacific Ocean to the south (makai direction). Between Pearl City and 'Aiea, the corridor's width is less than one mile between the Pacific Ocean and the base of the Ko'olau Mountains.

The General Plan for the City and County of Honolulu directs future population and employment growth to the ‘Ewa and Primary Urban Center (PUC) Development Plan areas and the Central O‘ahu Sustainable Communities Plan area. The largest increases in population and employment are projected in the ‘Ewa, Waipahu, Downtown, and Kaka‘ako districts, which are all located in the corridor (Figure 1-2).

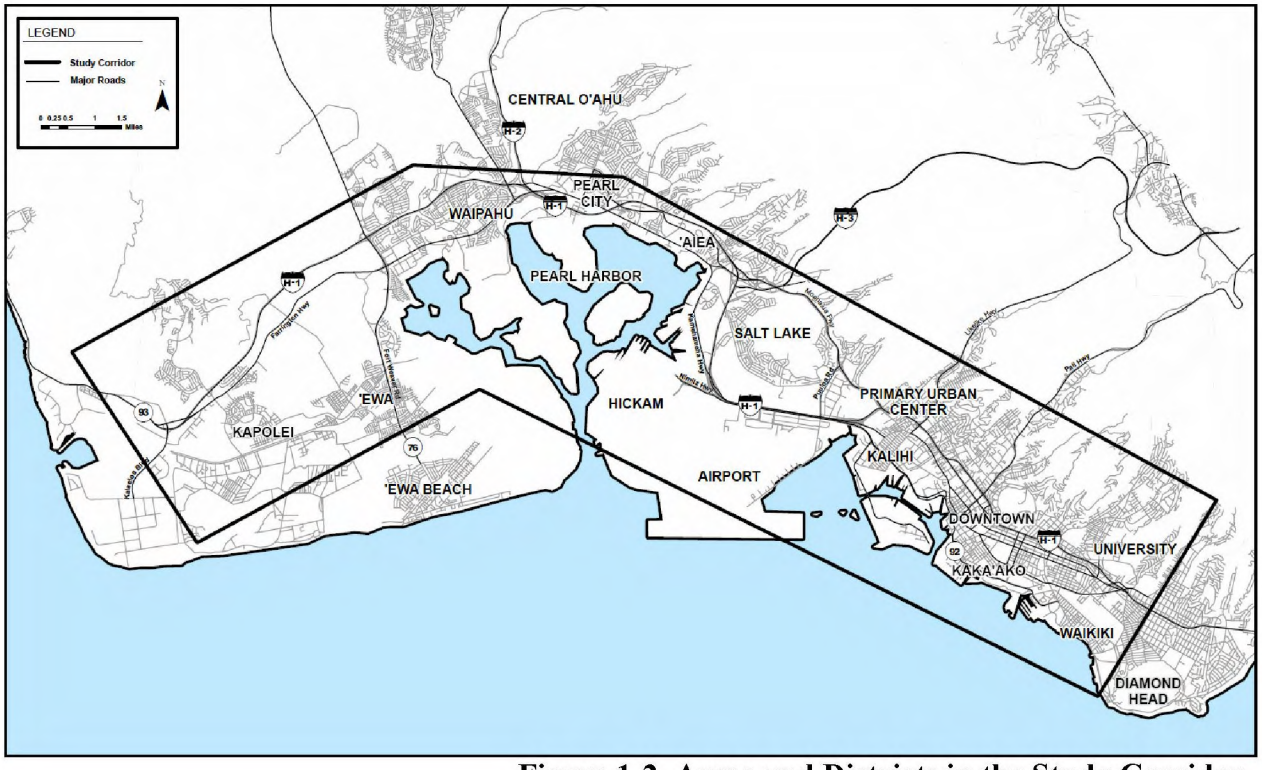

Figure 1-2. Areas and Districts in the Study Corridor

Currently, 63 percent of the 876,200 people living on O‘ahu and 81 percent of the 499,300 jobs on O‘ahu are located within the study corridor. By 2030 this distribution will increase to 69 percent of the population and 84 percent of the employment as development continues to be concentrated into the PUC and ‘Ewa Development Plan areas. Kapolei is the center of the ‘Ewa Development Plan area and has been designated as O‘ahu’s “second city.” City and State government offices have opened in Kapolei, and the University of Hawai‘i is developing a master plan for a new West O‘ahu campus there. The Kalaeloa Community Development District (formerly known as Barbers Point Naval Air Station) covers 3,700 acres adjacent to Kapolei and is planned for redevelopment. The Department of Hawaiian Home Lands is also a major landowner in the area and is planning for residential and retail development. In addition, developers have several proposals to continue the construction of residential subdivisions.

Continuing Koko Head, the corridor follows Farrington and Kamehameha Highways through a mixture of low-density commercial and residential development. This part of the corridor passes through the makai portion of the Central O‘ahu Sustainable Communities Plan area.

Farther Koko Head, the corridor enters the PUC Development Plan area, which is bounded by commercial and residential densities that begin to increase in the vicinity of Aloha Stadium. The Pearl Harbor Naval Reserve, Hickam Air Force Base, and Honolulu International Airport border the corridor on the makai side. Military and civilian housing are the dominant land uses mauka of Interstate Route H-1 (H-1 Freeway), with a concentration of high-density housing along Salt Lake Boulevard.

As the corridor continues Koko Head across Moanalua Stream, the land use becomes increasingly dense. Industrial and port land uses dominate along the harbor, shifting to primarily commercial uses along Dillingham Boulevard, a mixture of residential and commercial uses along North King Street, and primarily residential use mauka of the H-1 Freeway.

Koko Head of Nu'uanu Stream, the corridor continues through Chinatown and Downtown. The Chinatown and Downtown areas, with 62,300 jobs, have the highest employment density in the corridor. The Kaka'ako and Ala Moana neighborhoods, comprised historically of low-rise industrial and commercial uses, are being revitalized with several high-rise residential towers currently under construction. Ala Moana Center, both a major transit hub and shopping destination, is served by more than 2,000 weekday bus trips and visited by more than 56 million shoppers annually.

The corridor continues to Waikīkī and through the McCully neighborhood to UH Mānoa. Today, Waikīkī has more than 20,000 residents and provides more than 44,000 jobs. It is one of the densest tourist areas in the world, serving approximately 72,000 visitors daily (DBEDT, 2003). UH Mānoa is the other major destination at the Koko Head end of the corridor. It has an enrollment of more than 20,000 students and approximately 6,000 staff (UH, 2005). Approximately 60 percent of students do not live within walking distance of campus (UH, 2002) and must travel by vehicle or transit to attend classes.

Alternatives under Consideration

Four alternatives will be evaluated in the Alternatives Analysis (AA) report. They were developed through a screening process that considered alternatives identified through previous transit studies, a field review of the study corridor, an analysis of current housing and employment data for the corridor, a literature review of technology modes, work completed by the O'ahu Metropolitan Planning Organization (OMPO) for its Draft 2030 Regional Transportation Plan, and public and agency comments received during a formal project scoping process held in accordance with requirements of the National Environmental Policy Act (NEPA) and the Hawai'i EIS Law (Chapter 343, Hawai'i Revised Statutes). The four alternatives are described in detail in the *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Definition of Alternatives Report* (DTS, 2006a). The alternatives identified for evaluation in the AA report are as follows:

- No Build Alternative
- Transportation System Management Alternative
- Managed Lane Alternative
- Fixed Guideway Alternative

Alternative 1: No Build

The No Build Alternative includes existing transit and highway facilities and committed transportation projects anticipated to be operational by 2030. Committed transportation projects are those programmed in the O'ahu 2030 Regional Transportation Plan prepared by OMPO. The committed highway elements of the No Build Alternative also will be included in the build alternatives (discussed below).

The No Build Alternative's transit component would include an increase in fleet size to accommodate growth in population, while allowing service frequencies to remain the same as today.

Alternative 2: Transportation System Management

The Transportation System Management (TSM) Alternative would provide an enhanced bus system based on a hub-and-spoke route network and relatively low-cost capital improvements on selected roadway facilities to give priority to buses. The TSM Alternative would include the same committed highway projects as assumed for the No Build Alternative.

Alternative 3: Managed Lane

The Managed Lane Alternative would include construction of a two-lane, grade-separated facility between Waipahu and Downtown Honolulu for use by buses, paratransit vehicles, and vanpool vehicles. High-occupancy vehicles (HOV) and toll-paying, single-occupant vehicles also would be allowed to use the facility provided that sufficient capacity would be available to maintain free-flow speeds for buses and the above-noted paratransit and vanpool vehicles. Variable pricing strategies for single-occupant vehicles would ensure free-flow speeds for high-occupancy vehicles.

Intermediate bus access points would be provided in the vicinity of Aloha Stadium and Middle Street. Buses using the managed lane facility would be restructured and enhanced, providing additional service between Kapolei and other points 'Ewa of the PUC, as well as Downtown Honolulu and UH Mānoa.

Alternative 4: Fixed Guideway

The Fixed Guideway Alternative would include the construction and operation of a fixed-guideway transit system between Kapolei and UH Mānoa. The system could use any fixed-guideway transit technology approved by FTA and meeting performance requirements, and could be automated or employ drivers.

Station and supporting facility locations are currently being identified and would include a vehicle maintenance facility and park-and-ride lots. Bus service would be reconfigured to bring riders on local buses to nearby fixed-guideway transit stations.

Although this alternative would be designed to be within existing street or highway rights-of-way as much as possible, property acquisition at various locations is expected to

be necessary. Future extensions of the system to Central O'ahu, East Honolulu, or within the corridor are possible, but are not being addressed in detail at present.

A broad range of modal technologies was considered for application to the Fixed Guideway Alternative, including light rail transit, personal rapid transit, automated people mover, monorail, magnetic levitation (maglev), commuter rail, and emerging technologies still in the developmental stage. Several technologies were selected in an earlier screening process and will be considered as possible options for the fixed-guideway technology. Technologies that were not carried forward from the screening process include personal rapid transit, commuter rail, and the emerging technologies. The screening process is documented in the *Honolulu High-Capacity Transit Corridor Project Screening Report* (DTS, 2006b).

The study corridor for the Fixed Guideway Alternative will be evaluated in five sections to simplify analysis and impact evaluation in the AA process and report. In general, each alignment under consideration within each of the five sections may be combined with any alignment in the adjacent sections.

Each alignment has distinctive characteristics and environmental impacts and provides different service options. Therefore, each alignment will be evaluated individually and compared to the other alignments in each section. The sections that will be evaluated and the alignments being evaluated for each section are listed in Table 1-1. In addition to the combinations of alignments, a shorter 20-mile Alignment also was evaluated.

Table 1-1. Fixed Guideway Alternative Analysis Sections and Alignments

Section	Alignments Being Considered
I. Kapolei to Fort Weaver Road	Kamokila Boulevard/Farrington Highway
	Kapolei Parkway/North-South Road
	Saratoga Avenue/North-South Road
	Geiger Road/Fort Weaver Road
II. Fort Weaver Road to Aloha Stadium	Farrington Highway/Kamehameha Highway
III. Aloha Stadium to Middle Street	Salt Lake Boulevard
	Makai of the Airport Viaduct
	Mauka of the Airport Viaduct
	Aolele Street
IV. Middle Street to Iwilei	North King Street
	Dillingham Boulevard
V. Iwilei to UH Mānoa	Hotel Street/Kawaiaha‘o Street/Kapi‘olani Boulevard with or without Waikīkī Branch
	Hotel Street/Waimanu Street/Kapi‘olani Boulevard with or without Waikīkī Branch
	Nimitz Highway/Queen Street/Kapi‘olani Boulevard with or without Waikīkī Branch
	Nimitz Highway/Halekauwila Street/Kapi‘olani Boulevard with or without Waikīkī Branch
	Beretania Street/South King Street
	Waikīkī Branch

Project Purpose

The purpose of the Honolulu High-Capacity Transit Corridor Project is to provide improved mobility for persons traveling in the highly congested east-west transportation corridor between Kapolei and UH Mānoa, confined by the Wai‘anae and Ko‘olau Mountain Ranges to the north and the Pacific Ocean to the south. The project would provide faster, more reliable public transportation services in the corridor than those currently operating in mixed-flow traffic. The project would also provide an alternative to private automobile travel and improve linkages between Kapolei, the urban core, UH Mānoa, Waikīkī, and urban areas in-between. Implementation of the project, in conjunction with other improvements included in the 2030 O‘ahu Regional Transportation Plan (ORTP), would moderate anticipated traffic congestion in the corridor. The project also supports the goals of the O‘ahu General Plan and the ORTP by serving areas designated for urban growth.

Project Area Needs

Improved Mobility for Travelers Facing Increasingly Severe Traffic Congestion

The existing transportation infrastructure in the corridor between Kapolei and UH Mānoa is overburdened handling current levels of travel demand. Motorists experience

substantial traffic congestion and delay at most times of the day during both the weekdays and weekends. Average weekday peak-period speeds on the H-1 Freeway are currently less than 20 miles per hour (mph) in many places and will degrade even further by 2030. Transit vehicles are caught in the same congestion. Travelers on O'ahu's roadways currently experience 51,000 vehicle hours of delay, a measure of how much time is lost daily by travelers stuck in traffic, on a typical weekday. This is projected to increase to more than 71,000 daily vehicle hours of delay by 2030, assuming implementation of all of the planned improvements listed in the ORTP (except for a fixed guideway system). Without these improvements, the ORTP indicates that daily vehicle-hours of delay could increase to as much as 326,000 vehicle hours.

Current a.m. peak-period travel times for motorists from West O'ahu to Downtown average between 45 and 81 minutes. By 2030, after including all of the planned roadway improvements in the ORTP, this travel time is projected to increase to between 53 and 83 minutes. Average bus speeds in the system have been decreasing steadily as congestion has increased. Currently, express bus travel times from 'Ewa Beach to Downtown range from 45 to 76 minutes and local bus travel times from 'Ewa Beach to Downtown range from 65 to 110 minutes during the peak period. By 2030, these travel times are projected to increase by 20 percent on an average weekday. Within the urban core, most major arterial streets will experience increasing peak-period congestion, including Ala Moana Boulevard, Dillingham Boulevard, Kalākaua Avenue, Kapi'olani Boulevard, King Street, and Nimitz Highway. Expansion of the roadway system between Kapolei and UH Mānoa is constrained by physical barriers and by dense urban neighborhoods that abut many existing roadways. Given the current and increasing levels of congestion, a need exists to offer an alternative way to travel within the corridor independent of current and projected highway congestion.

Improved Transportation System Reliability

As roadways become more congested, they become more susceptible to substantial delays caused by incidents, such as traffic accidents or heavy rain. Even a single driver unexpectedly braking can have a ripple effect delaying hundreds of cars. Because of the operating conditions in the study corridor, current travel times are not reliable for either transit or automobile trips. To get to their destination on time, travelers must allow extra time in their schedules to account for the uncertainty of travel time. This is inefficient and results in lost productivity. Because the bus system primarily operates in mixed-traffic, transit users experience the same level of travel time uncertainty as automobile users. A need exists to reduce transit travel times and provide a more reliable transit system.

Accessibility to New Development in 'Ewa/Kapolei/Makakilo as a Way of Supporting Policy to Develop the Area as a Second Urban Center

The General Plan for the City and County of Honolulu projects the highest population growth rates for the island will occur in the 'Ewa Development Plan area (comprised of the 'Ewa, Kapolei, and Makakilo communities), which is expected to grow by 170 percent between 2000 and 2030. This growth represents nearly 50 percent of the total

growth projected for the entire island. The Wai‘anae, Wahiawā, North Shore, Windward, Waimānalo, and East Honolulu areas will have population growth of between zero and 16 percent because of this policy, which keeps the country "country." Kapolei, which is developing as a "second city" to Downtown Honolulu, is projected to grow by nearly 600 percent to 81,100 people, the ‘Ewa neighborhood by 100 percent, and Makakilo by 125 percent between 2000 and 2030. Accessibility to the overall ‘Ewa Development Plan area is currently severely impaired by the congested roadway network, which will only get worse in the future. This area is less likely to develop as planned unless it is accessible to Downtown and other parts of O‘ahu; therefore, the ‘Ewa, Kapolei, and Makakilo area needs improved accessibility to support its future growth as planned.

Improved Transportation Equity for All Travelers

Many lower-income and minority workers live in the corridor outside of the urban core and commute to work in the PUC Development Plan area. Many lower-income workers also rely on transit because of its affordability. In addition, daily parking costs in Downtown Honolulu are among the highest in the United States (Colliers, 2005), further limiting this population's access to Downtown. Improvements to transit capacity and reliability will serve all transportation system users, including low-income and under-represented populations.

Project Schedule

Projects developed through the FTA New Starts process progress through many stages from system planning to operation of the project. The Honolulu High-Capacity Transit Corridor Project is currently in the Alternatives Analysis phase, which includes defining and evaluating specific alternatives to address the purpose of and need for the project as discussed in this chapter. The anticipated project development schedule for completion of the 20-mile Alignment is shown in Figure 1-3.

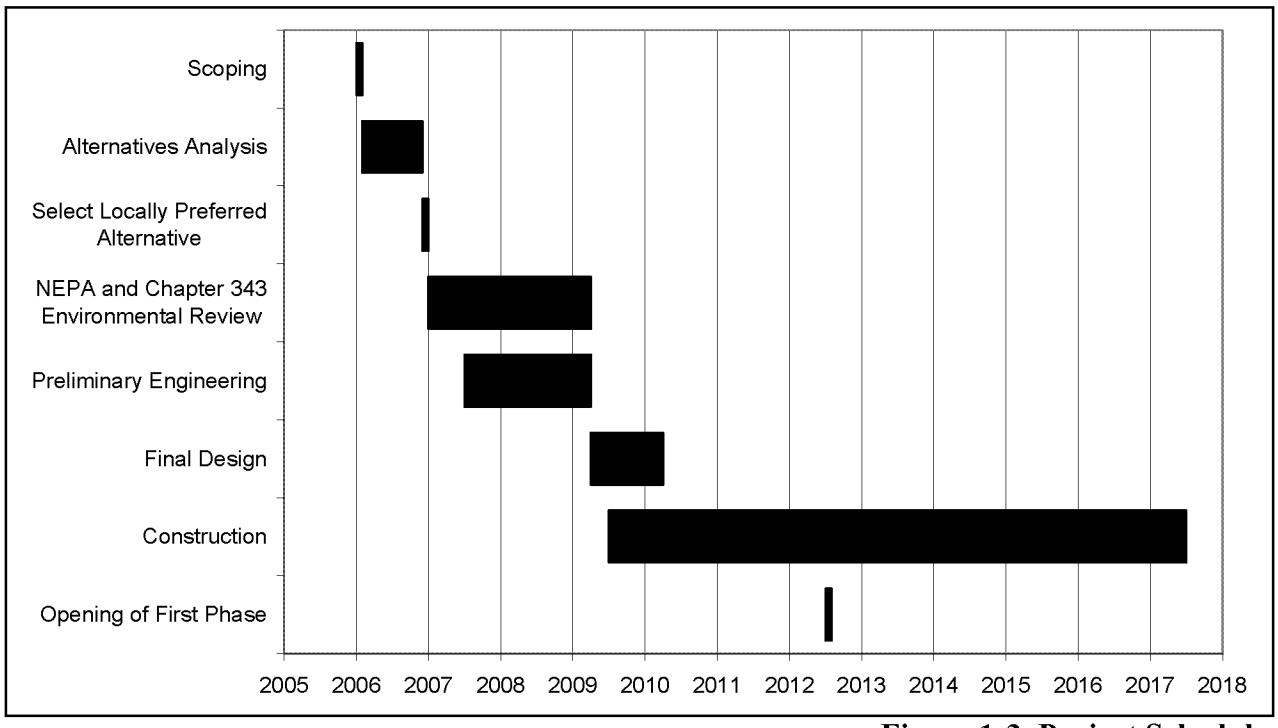

Figure 1-3. Project Schedule

Chapter 2 Studies and Coordination

The analysis contained in this report is supported by information obtained from previous studies and reports conducted within the study corridor, as well as coordination with local and state government agencies, non-profit organizations, and members of the public. This chapter identifies sources of information used for baseline information and analysis and the regulatory framework that sets guidance on analysis of impacts to neighborhoods and communities. It also provides a description of the coordination efforts and public involvement activities that contributed to the preparation of this report.

Studies

Information that was obtained from the review of previous corridor studies, and that was pertinent to the current conditions and evaluation standards for this analysis, was used as the baseline conditions for comparison of alternatives and relevant impacts. The following studies were used for background and baseline information.

- Honolulu Rapid Transit Final Environmental Impact Statement (DTS, 1992)
- Primary Corridor Transportation Project, Supplemental Draft Environmental Impact Statement (HDOT, 2003b)
- North-South Road and Kapolei Parkway Final Environmental Assessment (HDOT, 2004)
- Fort Barrette Road Draft Environmental Assessment (HDOT, 2005)
- Honolulu High-Capacity Transit Corridor Scoping Report (DTS, 2006a)

The analysis of impacts to neighborhoods and communities contains an interdisciplinary assessment and requires the consideration and inclusion of studies prepared by other technical disciplines. In particular, the following technical studies were used:

- Cultural
- Historic
- Land Use
- Noise
- Public Involvement
- Traffic
- Visual

Regulatory Setting

The following regulations govern the assessment of impacts to neighborhoods and communities as they relate to transportation projects:

- National Environmental Policy Act (NEPA) – established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)].

- Federal Highway Act of 1970: 23 USC 109 (h) – established basis for equitable treatment of communities being affected by transportation projects. It requires consideration of the anticipated effects of proposed transportation projects upon residences, businesses, farms, accessibility of public facilities, tax base, and other community resources.
- Americans with Disabilities Act of 1990 – prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation.
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended – To provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by Federal and federally assisted programs and to establish uniform and equitable land acquisition policies for Federal and federally assisted programs.

In addition, regulations that assist project's in identifying effects on minorities and low-income populations include the following:

- Title VI of the Civil Rights Act of 1964 (CRA) – declares it to be the policy of the United States that discrimination on the ground of race, color, or national origin should not occur in connection with programs and activities receiving Federal financial assistance and authorizes and directs the appropriate Federal departments and agencies to take action to carry out this policy.
- Environmental Justice (Executive Order 12898) – "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low income populations and communities.

In addition to the requirement of CRA Title VI and EO 12898, the following regulations would also apply to the project's environmental justice analysis and outreach efforts:

- U.S. Department of Transportation Order 5610.2 - describes the process that the Office of the Secretary and each Operating Administration will use to incorporate environmental justice principles (as embodied in the Executive Order) into existing programs, policies, and activities.
- Executive Order 13166 pertaining to people who are Limited English Proficient (LEP) and grounded on Title VI (signed on August 11, 2000).
- FHWA and FTA memorandum Implementing Title VI Requirements in Metropolitan and Statewide Planning (October 7, 1999).

Coordination

Communication and coordination with neighborhood groups and community-based organizations existing in or near the project area was conducted through a comprehensive *Public Involvement Plan* (DTS, 2006c). The plan included initial outreach in the form of focus groups and scoping meetings. The outreach and coordination efforts continued

through citizen and community meetings, additional scoping meetings, briefings for public officials, and development of advisory committees (see Appendix A). The *Public Involvement Plan* also included various methods for communicating project information to the public. These methods included media releases, public notices and advertisements, newsletters, a website, and a telephone information line. Information and comments obtained from the outreach and coordination efforts was used to gain a better understanding of potential impacts that could affect neighborhoods and communities within the study corridor. In addition to the public involvement plan and public outreach efforts, the following agencies were contacted and asked to provide input on the methodology for describing existing conditions and potential impacts related specifically to environmental justice. It is anticipated that these agencies will also be included in project development and coordination as necessary:

- State of Hawai‘i Department of Transportation (HDOT)
- City and County of Honolulu, Department of Permitting and Planning (DPP)
- City and County of Honolulu, Department of Transportation Services (DTS)
- Federal Transit Administration (FTA)
- Environmental Protection Agency (EPA)
- O‘ahu Metropolitan Planning Organization (OMPO)

The following service providers will also be asked for information and input during project development and coordination efforts.

- Local and State law enforcement;
- Fire Departments;
- Hospitals;
- Emergency Medical Response;
- Public Utility Providers;
- School Districts;
- Libraries;
- Churches;
- Park and Recreation Facilities; and
- Federal, State or Local Social Service Providers

Chapter 3 Methodology

Neighborhoods and communities are a system of people, places, facilities, and uses that are interrelated. The analysis of impacts on neighborhoods and communities includes an evaluation of the following elements that comprise a neighborhood or community:

- Community Setting
- Demographics Characteristics
- Environmental Justice and Communities of Concern
- Public Services and Community Facilities
- Parks and Recreation Resources
- Utilities
- Non-Motorized Transportation
- Displacements and Relocations
- Community Cohesion

The approach to assessing neighborhood and community impacts included evaluating the effects of the project during and after construction (planning horizon year 2030).

Community Setting

Community setting examines the context in which the project is anticipated to occur and defines the community's character, its neighborhoods, physical boundaries, and land uses. The community setting analysis focuses on an inventory of adjacent neighborhoods, their boundaries, land use patterns, and general character.

The analysis of community setting sets the framework for assessing impacts, which assists in comparing project alternatives. This report's analysis of the following neighborhood and community elements focuses on the environment that may be affected: demographic characteristics; environmental justice and communities of concern; public services and community facilities; parks and recreation resources; utilities; non-motorized transportation; displacements and relocations; and community cohesion.

Demographic Characteristics

The analysis of population, demographics, income, employment, and housing focuses on identifying the density and distribution of people throughout the study corridor, the location of employers in relationship to employees, and the characteristics of population groups in relation to opportunities for access to transportation options and systems. Community demographics, population trends, and employment statistics are identified using 1990 and 2000 U.S. Census Bureau data. The data analyzed include population growth, housing and household characteristics, income and employment, and transit dependency. To support the evaluation of each alternative in relation to the project objectives stated in the Alternatives Analysis (AA), the following measures (as reported in the Land Use Technical Report) were considered in evaluating impacts to community setting:

- future year employees within 1/2 mile of transit stations or access points; and
- future year population within 1/2 mile of transit stations or access points.

The analysis of demographics also identifies whether the transit system would provide needed services to a majority of the population and would make connections between densely populated areas and desired destinations. The following information is considered when identifying how the alternatives would meet the transportation needs within the study corridor. This information is considered in light of how it relates to current and future trends in population density, distribution, and future expansion or decline in activity levels:

- The number of current and predicted transit trips that would originate from transit-dependent communities;
- The current proximity of transit services to transit-dependent communities as measured by the number of current households that have no vehicle available and are located within 1/2 mile of proposed transit stations or access points; and
- User benefits or impacts for transit-dependent communities.

Environmental Justice and Communities of Concern

Regulatory Compliance and Guidance

In order to identify the project's effects on minorities and low-income populations, the environmental analysis was prepared in accordance with Title VI of the Civil Rights Act (CRA) of 1964 and Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994). In addition to the requirement of CRA Title VI and EO 12898, the following regulations and guidance would also apply to the project's environmental justice analysis and outreach efforts:

- U.S. Department of Transportation Order 5610.2;
- Executive Order 13166 pertaining to people who are Limited English Proficient (LEP) and grounded on Title VI (signed on August 11, 2000);
- Public Involvement Techniques for Transportation Decision-making (FHWA/FTA, September 1995);
- FTA Resource Information Center – Environmental Justice: *http://www.fta.dot.gov/transit_data_info/reports_publications/publications/environment/4805_5139_ENG_HTML.htm*;
- Environmental Justice in the OMPO Planning Process: Defining Environmental Justice (O'ahu Metropolitan Planning Organization, March 2004);
- FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (FHWA, December 2, 1998);
- Environmental Justice Guidance Under the National Environmental Policy Act (Council on Environmental Quality, December 10, 1997); and
- Hawai'i Department of Transportation, *Title VI Plan* (2003).

Definitions

The term "low-income", in accordance with U.S. Department of Transportation Order 5610.2 and agency guidance, is defined as a person with household income at or below the Department of Health and Human Services (HHS) poverty guidelines. These **poverty guidelines** are a simplified version of the federal poverty thresholds used for administrative purposes (e.g., for determining financial eligibility for certain federal programs. The U.S. Census Bureau has developed *poverty thresholds*, which are used for calculating all official poverty population statistics. The Census Bureau applies these thresholds to a family's income to determine its poverty status. (U.S. Department of Health and Human Services, 2006)

The U.S. Department of Transportation issued Order 5610.2 to comply with Executive Order 12898. It generally describes the process to incorporate environmental justice principles (as embodied in the Executive Order) into existing programs and policies. The U.S. Department of Transportation Order 5610.2 and subsequent agency and Census Bureau guidance defines the term "minority" to include any individual who is:

- **American Indian or Alaska Native (AIAN)**: a person with origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.
- **Asian**: a person with origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- **Black or African American (Black)**: a person with origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."
- **Native Hawaiian or Other Pacific Islander (NHOPI)**: a person with origins in any of the original peoples of Hawai'i, Guam, Samoa, or other Pacific Islands.
- **Hispanic or Latino (Hispanic)**: a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The term, "Spanish origin," can be used in addition to "Hispanic or Latino."

While the U.S. Department of Transportation and Census Bureau definition of minority is not technically correct in Hawai'i because these groups comprise a majority of the population, it will be used in this report to meet Federal requirements.

A *Linguistically Isolated Household* is defined as a household in which no person age 14 or over speaks English at least "very well".

Impacts Analysis

Input is solicited from communities of concern to encourage traditionally under-served groups to articulate issues that should be addressed but may otherwise not be identified. The goal is also to provide opportunities for meaningful involvement in discussing the alternatives analysis, location of features, and/or the design of the alternatives throughout the project.

The analysis of impacts on disadvantaged populations consists of three integrated parts: 1) the identification of minority and/or low-income populations within the project study area; 2) a determination of whether they would experience disproportionately high and adverse impacts; and 3) outreach to and involvement of minority and low-income populations. Figure 3-1 describes the process that was used to analyze environmental justice for the project.

Populations that meet the federal definitions for protected group status (minority and/or low-income population) under Executive Order 12898 are referred to in this report as "communities of concern". Based on guidance from the federal Council on Environmental Quality (CEQ), "minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (CEQ, 1997). The fifty-percent benchmark is not meaningful for Hawai'i because over 50 percent of Hawai'i's overall population belongs to a population group that is defined as minority by the U.S. Census Bureau. Therefore, the definition of "minority" will be used only when the minority population of the affected area is meaningfully greater than the surrounding population.

In 2000, the O'ahu Metropolitan Planning Organization (OMPO) undertook an effort to evaluate its regional transportation plan (RTP) and transportation improvement program (TIP) using the principles of Title VI and environmental justice and produced the *Environmental Justice in the OMPO Planning Process: Defining Environmental Justice* in March 2004. The report documented OMPO's methodology to determine Environmental Justice areas and the results of the analysis. Using 2000 Census data, OMPO's analysis uses the federal definition of minority as well as the "poverty thresholds" as defined by the Census Bureau.

OMPO analyzed the relative concentration of each minority race in each block group compared to the block group's relative population size, to determine the "normalized concentration". To find a meaningful threshold for minority concentration, the normalized concentration values were sorted in ascending order, and the rate at which the normalized concentration increased was analyzed. This determined a cut-off point upon which the identification of environmental justice populations would be based. The thresholds for the O'ahu were identified as the following: Low-Income: 0.4910; Black: 0.9082; Hispanic: 0.2479; AIAN: 2.1599; Asian: 0.3208; and NHOPI: 0.3072. Once the cut-off point or threshold was determined, any block groups with normalized concentrations greater than or equal to the thresholds were identified as "EJ Areas" (areas where the minority or low-income population was meaningfully greater than the surrounding population). See *Environmental Justice in the OMPO Planning Process: Defining Environmental Justice* (OMPO, 2004b) for more information. To determine minority and/or low income populations for the project, the results of OMPO's analysis were identified and the block groups identified as EJ Areas by OMPO are defined as communities of concern for the project.

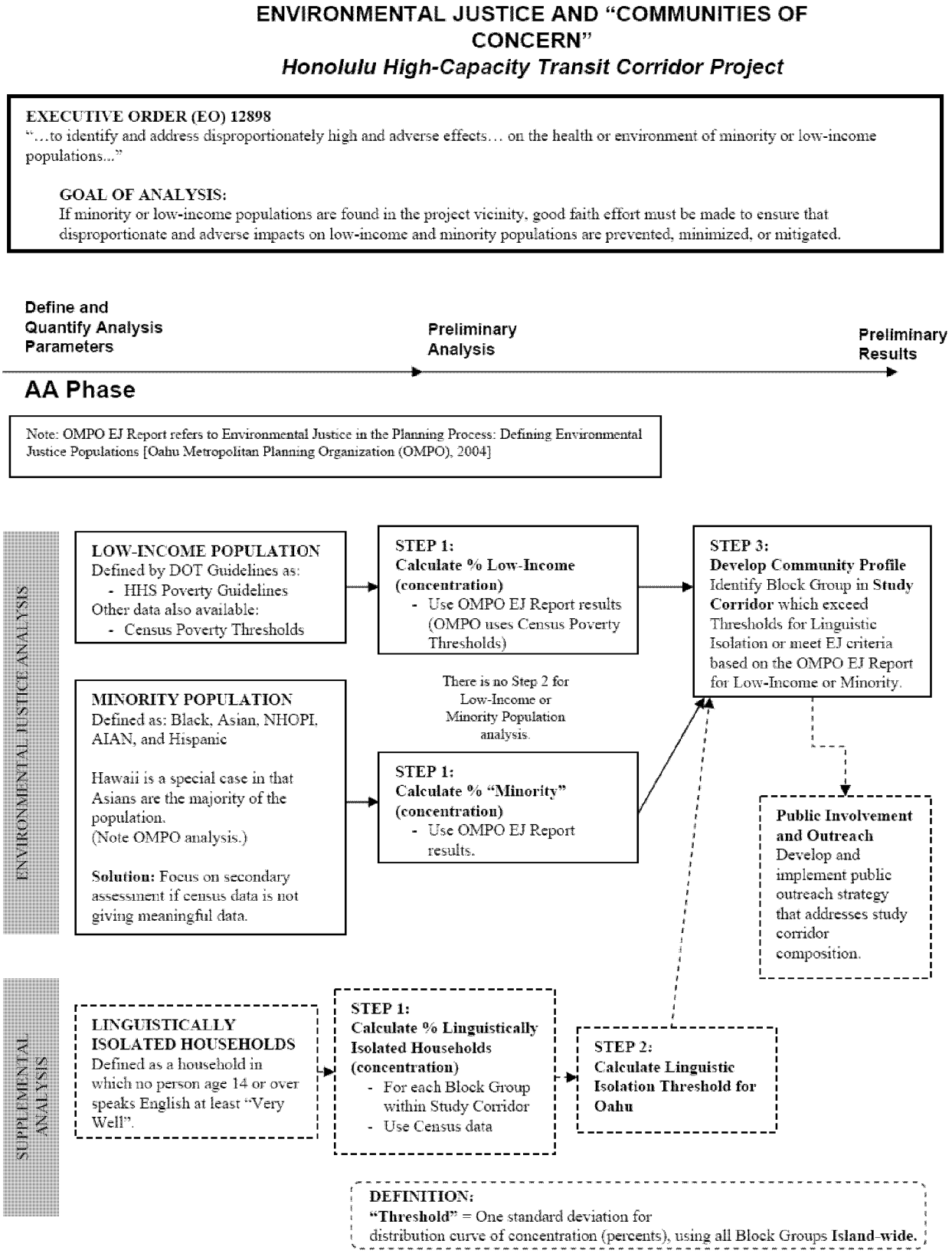

Figure 3-1. Environmental Justice and Communities of Concern Methodology

Recognizing that the majority of O'ahu's population is comprised of federally-defined minority populations, a supplemental identifier (linguistically isolated households) was used to further define communities of concern for the project. Based on knowledge of O'ahu's overall ethnic composition, "meaningfully greater" (from the CEQ guidelines) for linguistic isolation was defined as when a concentration greater than the threshold of concern exists. The "threshold" at which there is a meaningfully greater concentration of linguistically isolated households was defined as one standard deviation from the islandwide average concentration for all block groups. Step Two in Figure 3-1 shows the process of obtaining the islandwide average and standard deviation. A map of block groups identified as minority or low-income populations (as identified by OMPO) or block groups with linguistically isolated households was used to develop a preliminary community profile (Figure 3-1, Step 3). This map is shown in Chapter 4, Figure 4-8.

To support the evaluation of each alternative in relation to the project objectives stated in the alternatives Analysis (AA), the following measure was used to assess effects related to environmental justice and communities of concern: displacement and/or other impacts to low income and minority communities.

Public Services and Community Facilities

Community facilities and public services include educational facilities, community centers, churches, libraries, hospitals, social services, and emergency services including police, fire and emergency response.

An inventory of public services and facilities within the study corridor was developed based on information from the City and County of Honolulu General Plan, the City and County DPP, the City and County Department of Emergency Services, and other pertinent, available resources. Potential construction period and long-term project-related impacts to these services and facilities were identified as they relate to potential acquisitions and access changes. To identify potential impacts, the following criteria were used in assessing affected community services and facilities:

- the number of acquired parcels that support a public service or facility, and
- the number of areas where access to properties would be permanently affected.

The focus of this analysis is on whether required property acquisition would affect any public services or facilities. The other key factor evaluated is whether any of the alternatives would create a long-term, substantial effect on the delivery of emergency services. For example, if the construction of the project required removing a bridge that is a primary access used by fire or police vehicles within their service district, the project could result in substantial increases in response times for emergency services due to required detours. The analysis of public services and community facilities also addresses public health and safety.

Parks and Recreation Resources

Parks and recreation resources include formal and informal resources such as parks, playgrounds, open space, and trails. Parks and recreation facilities in the vicinity of the project were identified based on information from the City and County of Honolulu General Plan, City and County DPP, the City and County Department of Parks and Recreation, the State of Hawai'i Department of Land and Natural Resources (DLNR), land use and zoning plans, field visits, and other pertinent available resources. The methodology for the analysis of parks and recreation resources identifies parklands including state, regional, and local parks and recreation facilities and also facilities located on public school grounds. Public schools with recreation facilities were included in the inventory of public park and recreation resources for their potential to provide a public resource such as baseball or sports fields for Little League or other sports programs.

In particular, an attempt was made to identify parks and recreation resources that would qualify as Section 4(f) resources. For any recreational resources within close proximity to the project corridor, a preliminary assessment was made regarding the property's Section 4(f) status. Local government input was not collected regarding the significance of the recreation resource in the community, because this effort would not determine whether potential effects could include constructive use of the recreation resource per Section 4(f) guidelines. For this analysis, impacts are evaluated for both the construction period and the long-term operation of the project. To identify potential impacts, the analysis focused on whether the required property acquisition would affect parks or recreation facilities and focused on the following criteria: the number of acquired parcels that support parkland or recreation resources.

This effort did not quantify the specific amount of recreation land and/or buildings that would be acquired.

Utilities

Utilities are comprised of water, wastewater, stormwater, electricity, natural gas, and telecommunication systems. These systems include buried or overhead lines, cables or pipes and buildings or facilities (e.g. stations or vaults) located in the public road right-of-way or on private property. Because public entities and investor-owned companies may own and operate utility systems, the identification of potential effects can be extremely complex.

To assess potential effects on utilities, research was conducted to obtain a general overview of utility systems and facilities that may be affected by the project alternatives. This research focused on identifying the location of utility facilities located on separate parcels within the project corridor. These could include above-ground or buried facilities such as electric substations, natural gas pump stations, or telephone switching stations. Utilities in the vicinity of the project were identified based on information from the City and County of Honolulu General Plan, the City and County DPP, and other pertinent available resources.

Coordination and consultation with project engineers was also conducted to determine the location of additional major transmission or pipeline facilities that would cross or would likely to be located within close proximity to the alternative alignments. These efforts were not meant to inventory each and every utility line within the project corridor, but to focus on major infrastructure issues.

The focus of this utilities impact analysis was to determine the number of utility facility properties that could be affected by property acquisition. It was anticipated that conflicts with major transmission or mainline facilities would require major and potentially costly reconstruction of these facilities, and would be considered when weighing the impacts of each alternative. To support the evaluation of each alternative in relation to the project objectives stated in the AA, the following measure was considered for evaluation of impacts to utilities: the degree to which utilities would need to be relocated, as determined by the number of acquired parcels that support utilities.

Non-Motorized Transportation

The discussion of non-motorized transportation examines potential effects on bicyclists and pedestrians.

The bikeway system provides residents and tourists with an inexpensive, convenient means of getting around O'ahu for recreation or commuting purposes. With the continued dependence on the automobile and increasing congestion found on the street system, the development and promotion of alternate travel means is important to the island of O'ahu. As defined by the *Bike Plan Hawai'i* (HDOT, 2003a), bikeway infrastructure on the island of O'ahu consists of three primary facility types: signed shared roadways, bicycle lanes, and shared use paths.

To assess potential effects on bicyclists, existing, underway, and proposed bicycle facilities that cross or are within the project corridor were identified and assessed for potential impacts. Bicycle facilities in the vicinity of the project corridor were identified based on the *Bike Plan Hawai'i* and *Honolulu Bicycle Master Plan* (City and County of Honolulu, 1999).

O'ahu has a developed pedestrian trail system, several components of which exist entirely or in part within the project area. The study area also contains other areas of concentrated pedestrian activity, including pedestrian malls and public beach accesses. To assess potential effects on pedestrian facilities, areas of concentrated pedestrian activity (including pedestrian malls and public beach access that may be affected by the alternatives) were identified and analyzed.

The focus of this analysis was to characterize non-motorized access and circulation in the study corridor, and to identify the number and location of potential major conflicts with existing and future facilities. For example, the following question was considered: *Would the alternative prevent the continued use of an existing non-motorized transportation facility, by requiring the removal of an existing bicycle facility over a roadway or highway?*

This effort did not identify all locations where the continued use of non-motorized transportation facilities would require a modification of user behavior (e.g., a stop sign installed to provide safety and ensure that bicyclists give the transit right-of-way.

Impacts to bicycle and pedestrian facilities are determined by whether these facilities would be enhanced or impeded by the project. Non-motorized benefits resulting from station-area improvements have not been included in the analysis because detailed station-area planning has not yet been completed.

Displacements and Relocations

The discussion of displacements and relocations is tightly linked with the anticipated permanent or temporary acquisition of rights-of-way required for construction of the proposed project. Permanent acquisition may include the purchase of all or part of an affected property or may include the land, buildings, or facilities located on the property. Temporary acquisition involves property that is either purchased or leased for temporary use (typically during project construction) for materials and equipment storage. Acquisitions may affect a variety of land uses and property owners. At this stage in the project, the demographic characteristics of residents, business owners, and employees who may be displaced by needed property acquisition have not been not evaluated.

The number of properties that would be acquired represents a conservative estimate. At this stage in the project, a distinction between required partial and full property acquisitions was not made. Nor, was temporary property acquisitions discussed except for the several, very large construction staging and laydown areas that would be needed. The type of properties (e.g., residential, commercial, industrial, etc.) was determined using readily available data such as aerial photography, land use and zoning maps, and assessor records. No field surveys or site investigations were conducted to confirm property type, use, or density. An estimate of the number of acres required for each type of property was made. These statistics, representing displacement and relocation effects, were used for the comparative evaluation of the alternatives in the AA report. The following measures were used to evaluate acquisition and relocation effects:

- the number and type of acquisitions; and
- the number of acres acquired for each type of property.

Community Cohesion

In many ways, the discussion of potential effects on community cohesion will reflect the project's cumulative effects on all social resources and how it will affect communities adjacent to the project corridor. Community cohesion relates to the "sense of belonging" or level of attachment that residents have to their neighborhood, neighbors, groups, or establishments. This usually results from interactivity, perceived association, or solidarity in voicing community concerns. The rate of transience (e.g. a high amount of rental properties or real estate turnover) may help determine how well a community is established. The identification of cultural practices within neighborhoods helps characterize their homogeneity or heterogeneity. Cohesion is a social attribute that

indicates a higher-than-average sense of community, common responsibility, social interaction within a limited geographic space, an interdependence that serves an assimilating function, or a number of other localized social purposes (FTA, 1986). This environmental element examines changes in quality of life and community character (e.g. urbanization), because a lot of change can reflect weakening or strengthening in neighborhood cohesion. Changes to the general physical character or connectivity within a neighborhood can also affect cohesiveness.

For purposes of the AA process, the impact analysis focuses on these changes to a neighborhood's general physical character or connectivity. The analysis examines how the alternative alignments would "fit" within the existing community setting. For example, the following question was asked: "*Does the alternative's alignment follow existing arterials and would the station locations, if any, be easily accessible for residents and those who work in the neighborhood?*" The alignment of the project alternatives may bisect an existing neighborhood, the elevation of a structure may create a physical barrier, or the facilities and operation could disrupt existing connectivity, which could potentially weaken cohesion. The analysis of cohesion identifies the number of neighborhoods that would be dramatically disrupted by the construction or operation of the various alternatives.

Chapter 4 Affected Environment

Transportation systems' effect on neighborhoods and communities can be shown through their impacts on the community's social environment. A social environment consists of a variety of interrelated activities, uses, and systems. These interrelationships include the quality and continuity of neighborhoods, access to needed services, and equitable effects on all persons. The following sections describe the social environment of the study corridor.

Community Setting

The Island of O'ahu is divided into eight General Plan Development Areas (DP Areas), which are intended to guide and influence land use (Figure 4-1). Of these eight DP Areas, the Honolulu High-Capacity Corridor Project study corridor overlies portions of three: 'Ewa, Central O'ahu, and the Primary Urban Center (PUC) DP Areas.

The 'Ewa DP Area is primarily a low-elevation plain that extends from sea level at the coastline to an elevation of about 100 feet three to five miles inland. The study corridor includes the majority of the 'Ewa DP area. The 'Ewa region was once one of O'ahu's prime sugarcane cultivation areas, but is now experiencing urban growth as the State and City and County of Honolulu support development of the region as O'ahu's "secondary urban center". The 'Ewa DP Area is slated to absorb a substantial amount of future growth with master-planned, transit-compatible new communities.

The Central O'ahu Sustainable Communities Plan area (also referred to as Central O'ahu DP Area) contains the wide fertile plateau between the Wai'anae and Ko'olau Mountain Ranges. The study corridor includes the southeastern portion of the Central O'ahu DP Area. This area was previously in extensive agricultural use and currently supports agricultural and preservation areas as well as suburbanized developments of moderate density. The goals for Central O'ahu include protecting agricultural land and preservation areas, revitalizing the Waipahu and Wahiawā neighborhoods, and developing master-planned communities in Mililani Mauka, Royal Kunia, Koa Ridge Makai, and Waiawa.

The PUC DP Area extends from Pearl City at the 'Ewa end to Wai'alae-Kāhala at the Koko Head end. The study corridor incorporates the majority of the PUC DP Area. The PUC is bounded to the north by the Ko'olau Mountain Range and to the south by the coastline of the Pacific Ocean. The PUC is a major travel destination as it encompasses the downtown area of Honolulu and Waikīkī's beachfront properties. This area supports high-density residential and business uses, with redevelopment occurring to support an anticipated housing and population increase of approximately 20 percent by 2025.

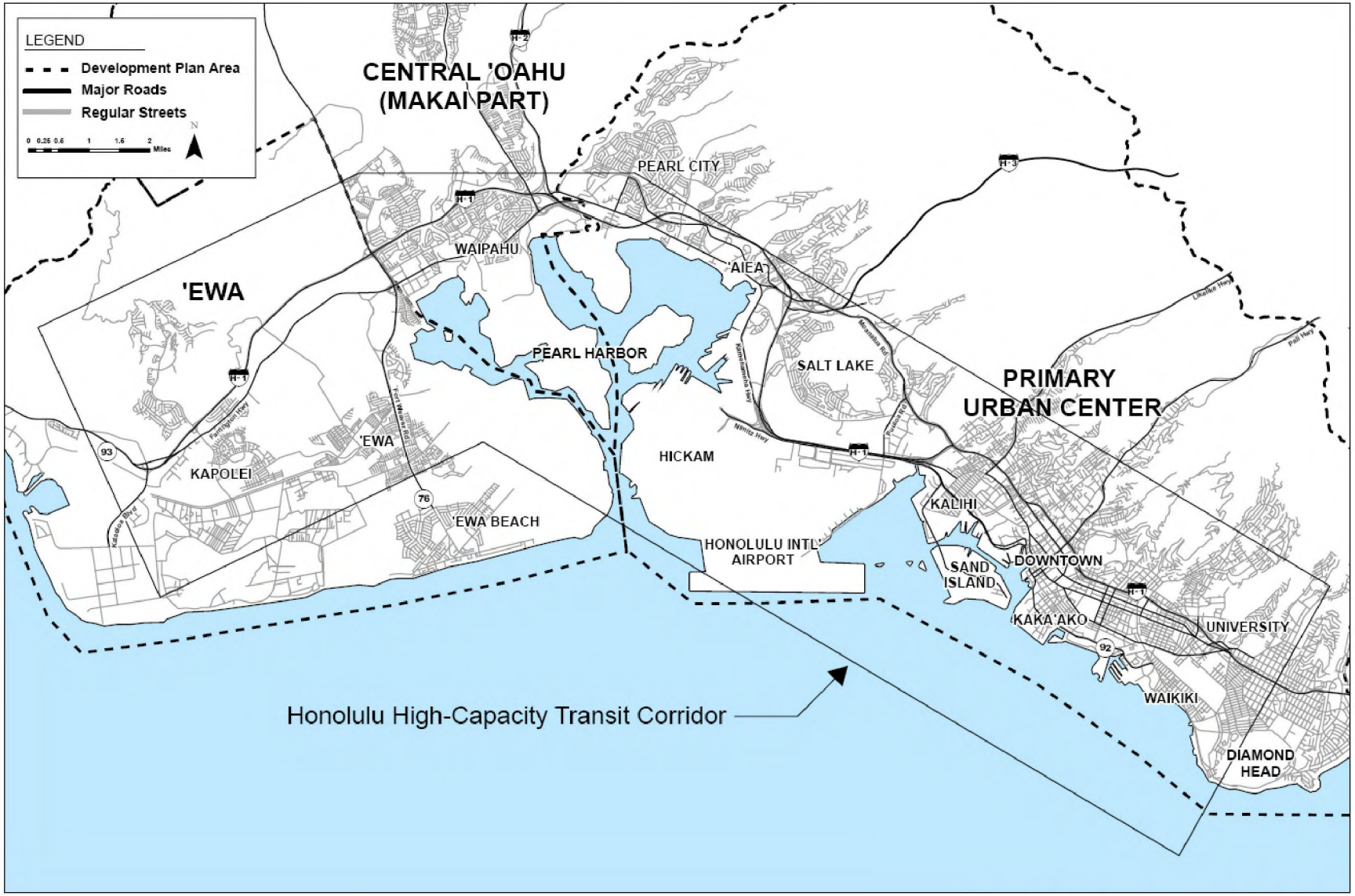

Figure 4-1. Development Plan Areas

In addition to the DP areas, the City and County of O'ahu, through the Revised City Charter of Honolulu (1973), established a system of Neighborhood Boards whose purpose is to "facilitate opportunities for community and government interaction" (City and County of Honolulu). O'ahu's neighborhood boards represent islandwide communities and are responsible for "involving communities in the decisions affecting them" (City and County of Honolulu). There are a total of 35 neighborhood areas (boundaries), 16 of which cross or border the study corridor (see Figure 4-2). Each of these neighborhood areas is characterized by special attributes that make them unique and therefore should be considered in light of the project. The following sections briefly describe the 16 neighborhood areas by project section. The major activity centers discussed are shown in Figure 4-3.

Section I – Kapolei to Fort Weaver Road

All the communities and neighborhoods in Section I are part of the 'Ewa DP area. They are represented by two neighborhood boards, Kapolei and 'Ewa, discussed in the following sections.

Kapolei

The Makikilo/Kapolei/Honokai Hale Neighborhood Board represents the communities of Kapolei, Makakilo, Honokai Hale, and Kalaeloa (formerly Barbers Point Naval Air Station), the industrial area of O'ahu known as Campbell Industrial Park, and the resort community of Ko 'Olina (formerly West Beach). These communities are located within the 'Ewa Plain and along the southern slopes of the Wai'anae Mountain Range and the island's central valley. The area is bounded by the ocean in the southern and western makai directions, the Wai'anae Mountain Range in the mauka direction, and Kalaeloa and Kalo'i Gulch on the Koko Head side (Figure 4-2). The H-1 Freeway divides the bedroom community of Makakilo from the other communities in the area. The H-1 Freeway and Farrington Highway connect the Kapolei area with Waipahu in the Koko Head direction (east) and Wai'anae and other west-side communities to the northwest. Renton Road connects the Kapolei area with 'Ewa.

Much of O'ahu's current and future population growth is occurring in, and is slated for, the city of Kapolei or the "Second City". State and City and County governments and some of Hawai'i's largest companies have set up sub-centers in Kapolei, as part of the State-mandated Secondary Urban Center for O'ahu. Other employment opportunities in the area include the Ko 'Olina resort and industries located in Campbell Industrial Park and Barbers Point Harbor. However, Kapolei remains largely a bedroom community. The rapid population growth and demand for housing in the area has outpaced local job creation and the majority living in and near Kapolei must seek employment in Honolulu.

Barbers Point Naval Air Station used to be the leading employment center with over 5,700 jobs until it closed on July 2, 1999 and was rededicated by the State of Hawai'i as the Kalaeloa Community Development District (Kalaeloa) (see Figure 4-3). The U.S. Navy still retains some housing and recreational facilities, such as the Barbers Point Golf Course and beach cottages. The Coast Guard currently uses the runway for their search and rescue aircrafts.

Figure 4-2. Neighborhood Board Boundaries

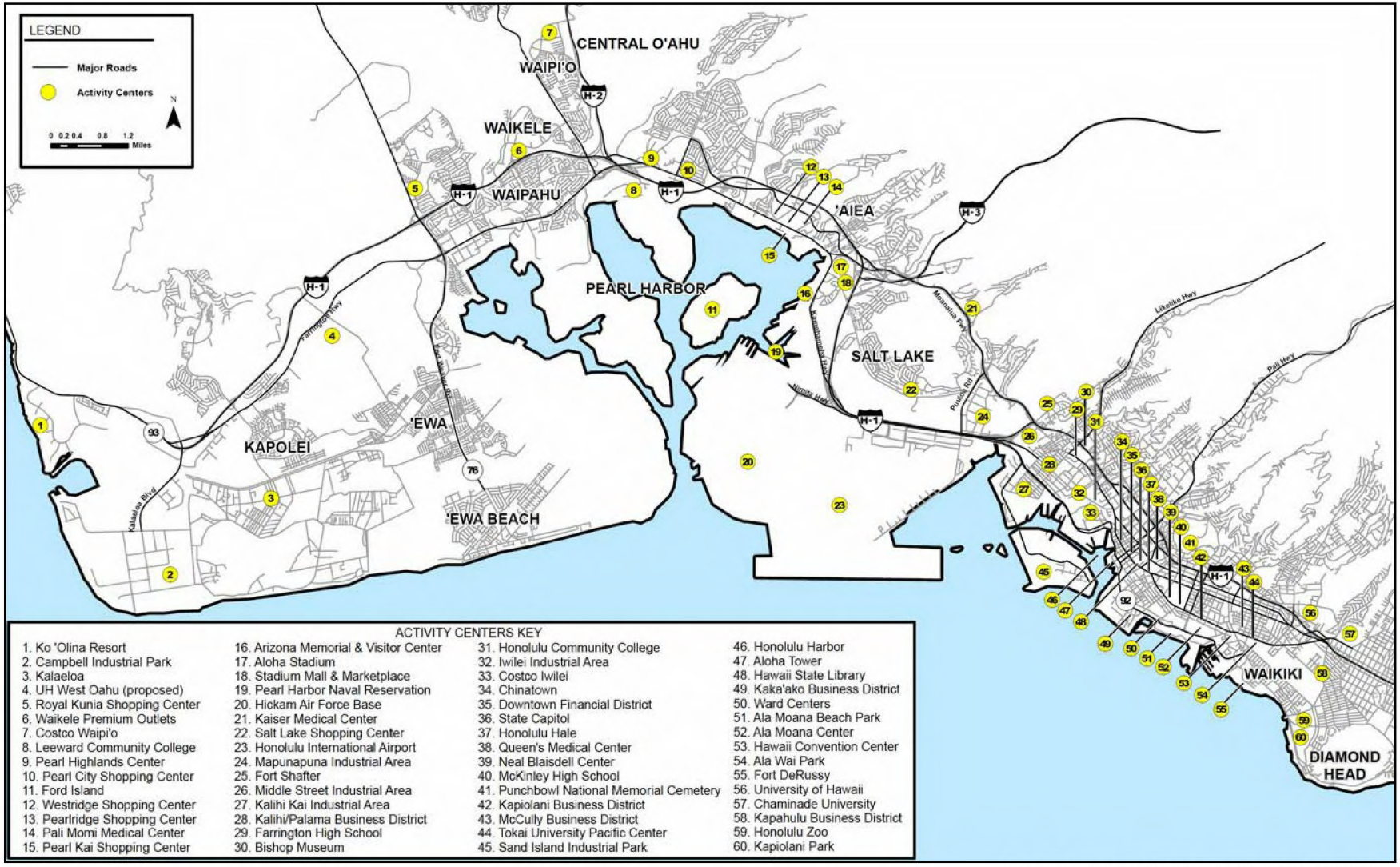

Figure 4-3. Major Activity Centers

Local attractions include:

- Ko ʻOlina Resort, which is visited by tourists and residents region-wide for recreational opportunities (see Figure 4-3).
- The Hawaiʻi Railway society, located near Varona Village just mauka of Kalaeloa, offers historic 6.5-mile Oʻahu Railway and Land (OR&L) train rides to Kahe Point, and draws region-wide visitors and tourists to the only resource of its kind on Oʻahu.
- Hawaiian Waters Adventure Park is the only water park on Oʻahu, drawing region-wide residents for water play in the day, and occasional concert-goers in the evening.
- Kapolei and Ko ʻOlina Golf Courses.

Other events in the area include the Relay for Life, which is held at Kapolei High School and the Christmas Light Kapolei held at Kapolei Hale. Kapolei community events are attended primarily by area residents, but may also include residents from surrounding communities.

ʻEwa

The ʻEwa area includes the ʻEwa Beach area, Naval Magazine Lualualei ammunitions facility (West Loch Naval Reservation), and ʻEwa Villages. The ʻEwa Villages are located inland from 'Ewa Beach along the main thoroughfare of Fort Weaver Road (Figure 4-2) and possible Fixed Guideway alignments pass through the community. The ʻEwa area is bound by Pearl Harbor's West Loch on the Koko Head side, the ocean along the makai side, H-1 along the mauka boundary, and Kalaeloa and Kaloʻi Gulch on the Waiʻanae side.

Fort Weaver Road, which runs north past Honouliuli to Waipahu and connects to Farrington Highway and H-1, is the only arterial that provides access in and out of the ʻEwa Beach area. Currently the main Koko Head-Waiʻanae (east-west) thoroughfare south of H-1 and Farrington Highway is Renton Road within the 'Ewa Villages area, which connects to Kalaeloa and Kapolei to the west. Eventually, Kapolei Parkway will replace Renton Road as the main thoroughfare in the Koko Head-Waiʻanae direction for the Second City.

In the late 1800s to early 1900s, 'Ewa was one of the largest population centers on the Island of O'ahu, with industry focused around sugar production. 'Ewa Mill was a major employer that set up residential villages within 'Ewa (from which the modern name arose). Sugar cane is no longer grown on the 'Ewa Plain and former agricultural land is being converted to urban uses throughout the area. 'Ewa is now one of O'ahu's suburban growth centers encompassing the communities of ʻEwa Villages, ʻEwa by Gentry, Honouliuli, ʻEwa Beach, Ocean Pointe, and Iroquois Point. However, there are few employment opportunities within ʻEwa today besides local stores,restaurants, and government offices.

Today, there are few attractions in the ʻEwa area and a limited number of visitors come to the area because ʻEwa is geographically removed and not "en route" to other areas (with the exception of Kapolei, which for most island residents can be accessed more quickly

and easily from H-1). Although visitors to the area may be limited, the four golf courses (‘Ewa Villages, Coral Creek, New ‘Ewa Beach, and Hawai‘i Prince) and associated clubhouses within ‘Ewa have a region-wide draw for this recreational pasttime.

Historic cultural events held in ‘Ewa reflect area’s multi-ethnic plantation heritage. As indicated by the historic Renton, Tenney, and Varona villages, ‘Ewa’s plantation history is an important part of the area’s cultural history and current social fabric. Today, this heritage is still visible in the buildings, homes, landscapes, and community and cultural gathering places. Honouliuli, a former village and internment camp lying along Honouliuli Stream between 'Ewa Villages and Waipahu, is now a place name for the north end of 'Ewa. Various churches use ‘Ewa Beach Park for Easter celebrations. Local schools participate in several festivals and parades, such as the Christmas Lights Parade and the Christmas Parade along Fort Weaver Road. Bon dances, a Japanese and Okinawan ritual used to commemorate the dead, are held at the Buddhist Honwanji in the summer.

Section II – Fort Weaver Road to Aloha Stadium

Section II consists of Waipahu, which is within the Central ‘O‘ahu DP area, plus Pearl City and ‘Aiea, which are within the Primary Urban Center (PUC) DP area.

Waipahu

The Waipahu Neighborhood Board area includes the area traditionally referred to as Waipahu and extends north of the H-1 Freeway to include the communities of Royal Kunia, Village Park, Waipi‘o, Crestview, and Waikele (SMS, 2000). This area is situated in the most southern portion of Central O‘ahu and is bordered by the ‘Ewa Plain in the Wai‘anae direction (west), and Pearl City in the Koko Head direction (Figure 4-2). This report focuses on the traditional Waipahu area south of the H-1 freeway and between Honouliuli Stream, Pearl Harbor, and Waiawa Stream. This older portion of Waipahu, through which the transit alternatives will travel, is limited by those highways and natural features. Waipahu is in many ways similar to a stand-alone small town surrounded by urban sprawl. Access to Waipahu is limited to a few specific entry points and the most mauka areas of Waipahu are further limited by the H-1 Freeway, which acts as a physical barrier to mauka-makai travel.

Waipahu began as an agricultural community with the cultivation of taro on the land and in the springs and streams that originated in Waikeke, or in an area of Waipahu known as Waikele (Sterling and Summers, 1978). Hawaiians developed fishponds in nearby Pearl Harbor until the late 1800s when rice was established with the arrival of Chinese immigrants. Once infrastructure such as irrigation lines and the O‘ahu Railroad were completed, large-scale sugar cultivation became the predominant industry. The Waipahu Sugar Mill, operated by the O‘ahu Sugar Company, was the focal point for this industry but ceased operation in 1995.

In order to accommodate urban growth, residential development has occurred since the 1960s. However, development of new industry has slowed since the closing of the sugar

mill in 1995. The former sugar mill site now houses community facilities and an industrial park that is not yet fully developed.

Waipahu has one centrally-located business district along Farrington Highway, often referred to as Old Waipahu Town. The business district begins on the Waiʻanae side from the Waipahu Town Center at the merge of Kunia and Fort Weaver Roads, and extends approximately two miles with minimal interruptions to Paiwa Road. The business district includes most of the basic types of retail businesses and services required to meet the Waipahu neighborhood's everyday needs. The neighborhood's predominant Filipino ethnic group has also led to a concentration of businesses catering to Filipinos both within Waipahu and in surrounding neighborhoods.

Because Waipahu's historic development was a sugar mill town, it retains a unique neighborhood identity that reflects the historic economic activity and settlement patterns of its plantation workers and inhabitants. Much of the plantation laborers were of Filipino decent and today that demographic is still reflected in Waipahu's otherwise diverse population. The Samoan ethnic group has also settled in Waipahu and established churches and businesses to support their community.

Much of Waipahu consists of small-scale, single-family houses organized into a traditional, small-block-grid pattern of narrow streets and residential subdivisions. Apartment buildings and strip malls are present throughout the neighborhood, but generally limited to the fringes of the Farrington Highway commercial district. Waipahu is a relatively self-contained community, with its own elementary and high schools, a recreation center, a Filipino community center, health clinics and centers, churches, and social service providers. However, like other suburban towns, many workers in the neighborhood travel outside the neighborhood for employment.

Waipiʻo Peninsula Soccer Park is a large, regionally utilized park facility. Hawaiʻi's Plantation Village is a region-wide visitor destination for school field trips and tourists. Located along Waikele Stream just mauka of Waipiʻo Peninsula, this cultural park and museum offers tours through a historic village where 19th-century sugarcane plantation life has been recreated, including homes and cultures of Hawaiian, Chinese, Portuguese, Japanese, Puerto Rican, Okinawan, Korean and Filipino plantation families. Japanese Bon dances are also held at the Waipahu Hongwanji and although a Japanese tradition, these events often draw multi-ethnic participants from throughout the community.

Pearl City

The Pearl City area extends from Waimalu Stream to Waiawa Stream in the Koko Head to Waiʻanae direction, and from the Koʻolau Range to the ocean in the mauka-makai direction (Figure 4-2). In Pearl City the proposed transit alternatives run along Kamehameha Highway, which is in the makai portion of Pearl City. Pearl City, originally developed by Benjamin Dillingham in 1890, was Hawaiʻi's first planned city and suburban development. Pearl Peninsula became the summer home for affluent and independent farmers who operated the pond field system, but is now a naval housing

area. The Pearl City area consists primarily of residential development, mixed-commercial uses, and military housing and facilities.

A major bus transfer station is located on Farrington Highway near Mokoula Street, providing a hub for the movement of people in and out of the area. A major transit center is also planned in the vicinity of Kaonohi Street and Kamehameha Highway. This indicates a substantial transportation demand in the area and a geographic location that is important as a central regional transportation hub.

Resources within Pearl City include Blaisdell Park, which is used as a recreational facility by residents region-wide for outdoor community activities such as hula, sports, and family events. A homeless population also inhabits the park and makeshift campsites border the park and the Pearl Harbor waterline. Because the park has attracted an increasing number of homeless people over the years, church and community groups regularly provide services for the disadvantaged at the park.

Retail and commercial shopping centers include Pearl City and Pearl Highlands, Hawai'i's fifth-largest shopping center (see Figure 4-3). Holiday celebration events include the annual Pearl City Christmas Parade sponsored by the Pearl City Shopping Center. Neighborhood Buddhist Hongwanji's host summertime Bon dances which are typically cultural gatherings for all ages and backgrounds. During the holiday winter season, the region is considered to hold one of the most dramatic Christmas displays in O'ahu. Elaborate yard decorations can be found on Hoolauae Street, mauka of Kamehameha Highway, attracting visitors from neighborhood and region-wide residents, tourists, and local media.

Aiea

The 'Aiea Neighborhood Board area includes the northern shore of East Loch of Pearl Harbor to 'Aiea Bay, the associated uplands rising to the north into the Ko'olau Range, Hālawa Stream on the Koko Head side, and Ka'ahumanu Street on the 'Ewa side (Figure 4-2). 'Aiea encompasses the communities of 'Aiea, 'Aiea Heights, Hālawa, Hālawa Heights, Pearl Ridge, Royal Summit, New Town, and Ford Island. The transit alternatives would all travel along Kamehameha Highway in 'Aiea, the makai side of this district. In 1889, the OR&L began operations from Honolulu to Pearl Lagoon, making Kamehameha Highway a major transportation corridor for people and goods in the region. Kamehameha Highway separated most of 'Aiea from the shore of Pearl Harbor.

At the end of the 19th century, a sugar cane plantation was opened by the Honolulu Plantation Company. By the early 1900s, 'Aiea had developed as a plantation town around the mill of the sugar cane plantation. After World War II, the plantation shut down, the mill was converted into a sugar refinery and the urbanization of 'Aiea began as developers started extending the town into the surrounding former sugar cane fields. The town's sugar history came to a close in 1996, when C&H Sugar closed the refinery. Most of the 'Aiea area has experienced such drastic transformation over the past century that little obvious aesthetics remain from its plantation heritage. However, Sumida

watercress farm is an important community landmark that creates an historical use amidst the heavily-urbanized environment along Kamehameha Highway.

The East Loch of Pearl Lagoon is the shoreline of ʻAiea. "Puʻuloa" (long hill) was the Hawaiian name for Pearl Harbor, and reflects the nature of the long-sloped hill that extends mauka to makai through ʻAiea to Pearl Harbor. Since ʻAiea has several miles of shoreline, Japan's 1941 attack on military facilities at Pearl Harbor greatly impacted the town. Much of the battle at Pearl Harbor was photographed from the hills in ʻAiea.

Aiea has grown into an important suburb of Honolulu, providing suburban housing for many who work in Downtown and Waikīkī. Many residents also work at nearby military installations (Pearl Harbor and Hickam). This suburbanized area consists primarily of residential development, mixed-commercial uses, and military housing and facilities. Most residents are located in the mauka areas and the makai areas tend to be commercial or military. The ʻAiea-Pearl City Livable Communities Plan was developed to improve the heavily-used but under-infrastructured Kamehmeha Highway corridor; establish town districts in ʻAiea and Pearl City; and create open space, expanded views, and better connections to the Pearl Harbor shoreline to rekindle the community's unique heritage.

Most residents' needs can be met without having to leave the community. The Pearlridge Shopping Center, the second largest shopping center on Oʻahu, is a major employment center and tourist destination that draws region-wide and islandwide consumers. Pearl Kai Shopping Center, located directly across the street from Pearlridge, is a large strip mall that mostly caters to local area needs. Located in the Stadium Mall Shopping Center, the Ice Palace is Oʻahu's only ice skating rink, a spot for Oʻahu residents of all ages to congregate for parties, ice sports, and socializing (see Figure 4-3).

Recreational facilities in the ʻAiea region include the ʻAiea Bay State Recreation Area, a six-acre park on the east shore of Pearl Harbor near the Aloha Stadium. The park is a popular picnic and cycling area with views of Pearl Harbor and the Arizona Memorial. The Pearl Harbor Bike Path passes through the park and is considered one of the safest and most scenic bicycle paths on the island. Up ʻAiea Heights Drive is the 384-acre forested Keaiwa Heiau State Recreation Area and ʻAiea Hiking Trail. The Pearl Country Club golf course is also located nearby.

In summary, the transit alternatives within ʻAiea would travel through primarily regional commercial areas that have relatively few residents. However, because the alignment is near the shoreline, the alternatives would travel near a number of the area's recreational facilities.

Section III – Aloha Stadium to Keʻehi Interchange

All of Section III is located within the PUC DP area. This includes the airport area, Āliamanu, Salt Lake, and Moanalua, which are discussed in this section.

Airport

A neighborhood board for the airport area has not been formed. Natural topography and manmade features within the Airport neighborhood area create four functionally distinct districts (Figure 4-2):

- The Airport Commercial District, located makai of the Nimitz Viaduct, serves as an area for primarily light industrial uses (see Figure 4-3).
- The Māpunapuna Commercial District, located between the Moanalua Freeway, Moanalua Stream, Nimitz Highway, and Puʻuloa Road, includes primarily light industrial businesses with some retail and commercial businesses and offices.
- The Fort Shafter Military Reservation mauka of H-1 freeway and the Fort Shafter Flats makai of H-1 and between Moanalua and Kalihi streams are active military bases (see Figure 4-3).
- Hickam Air Force Base residential housing (known as Catlin Housing) is located between Salt Lake Boulevard, Puʻuloa Road, Nimitz Highway, and Namur Road/Valkenburgh Street. This area includes single and multi-family housing occupied solely by military personnel. The Moanalua Shopping Center is a small shopping center near Valkenburgh Drive that caters mainly to surrounding military housing, Salt Lake, and Moanalua residents (see Figure 4-3).

Vehicular movement through the airport area is limited to a few arterial and feeder roads. The two main transportation corridors in the Koko Head-Waiʻanae direction are Salt Lake Boulevard and Nimitz Highway. Puʻuloa Road is the only direct mauka-makai connection in the Māpunapuna area. Further Waiʻanae, various roads snake through military housing and provide indirect linkages between Nimitz Viaduct and Salt Lake Boulevard. Lagoon Drive is the only public access road that allows for shoreline access to the Waiʻanae side of Keʻehi Lagoon Beach Park and airport facilities.

In the decades since construction of the Nimitz Viaduct, the neighborhood's character along Nimitz Highway has changed. In the past, it was a multi-service business district lined with regionally famous "mom-and-pop" eateries. It has become a more industrial, commercial service-oriented district predominantly lined with automobile and motorcycle dealerships.

Māpunapuna has always been a light industrial area with a few commercial and office buildings, primarily in the mauka portion (see Figure 4-3). One of the commercial establishments is 99 Ranch Market, a popular food market on Māpunapuna Street just makai of the Moanalua Freeway. This is a neighborhood and regional destination for local and Asian foods. Light industrial businesses previously located in Kākāʻāko have been relocating to Māpunapuna and the Airport area as Kākāʻāko is redeveloped.

The Navy-Marine golf course, which draws islandwide servicemen for recreational opportunities, is located in the most Waiʻanae-mauka side of the Airport area, directly mauka of the Nimitz Viaduct and Waiʻanae of the military housing. On the Koko Head side of the Airport area is Keʻehi Lagoon Beach Park, a regional shoreline resource with a unique canoe facility used by adjacent neighborhoods and surrounding communities.

Āliamanu-Salt Lake

The Āliamanu/Salt Lake/Foster Village Neighborhoods are bounded by Salt Lake Boulevard on the makai side and Moanalua Freeway on the mauka side (Figure 4-2). Three overlapping, low-profile, tuff cones or volcanic craters (Makalapa, Āliamanu, and Āliapa'akai), a salt lake, Salt Lake Boulevard, and the Moanalua Freeway limit access to and from the neighborhoods.

Early growth within the Salt Lake area was mainly attributed to the ease (in those days) with which residents could travel to and from downtown Honolulu and Waikīkī. The community was developed in the 1960s during the Hawai'i construction boom, providing residents with an expansive view of downtown Honolulu and the sugarcane plantations of the central O'ahu and 'Ewa plains. Today, housing in Salt Lake offers a variety of single-family homes, apartments, and condominiums and functions as a suburb of Downtown. The primary residential areas include:

- Foster Village, the westernmost neighborhood, has approximately 1,700 single-family homes and is across Salt Lake Boulevard from Makalapa Elementary School and Radford High School.
- Āliamanu Military Housing is located just east of Foster Village.
- Āliamanu, located south of Foster Village and the military housing, has approximately 1,500 single-family homes.
- Salt Lake, in the eastern portion of this area, can be further divided into three general areas:
- Salt Lake west, with around 500 single-family homes, includes the Salt Lake Shopping Center and Salt Lake Elementary School and is closely connected to Āliamanu.
- Ala 'Ilima is a high-rise condominium and apartment district with nearly 4,000 units between Salt Lake and Salt Lake Boulevard.
- Salt Lake east has nearly 2,200 single-family homes, and includes Moanalua High School.

Salt Lake's main commercial center is the Salt Lake Shopping Center, a local community mall that hosts some popular Hawaiian eateries and a mobile satellite city hall (see Figure 4-3). This shopping center and the nearby Stadium Marketplace provide for area residents' everyday needs.

The Āliamanu-Salt Lake community is almost completely surrounded by military installations and facilities, with the exception of its 'Ewa boundary along the H-1 Freeway. The area is home to many families of officers from the Air Force, Army, Coast Guard and Navy. Fort Shafter is the headquarters of the U.S. Pacific Army. Hickam Air Force Base is headquarters of the U.S. Pacific Air Forces. Pearl Harbor is headquarters of the U.S. Pacific Fleet. U.S. Pacific Command is located north of Salt Lake at Camp Smith. Tripler Army Medical Center, visible on the heights to the northeast, is the principal U.S. military medical facility for Asia and the Pacific Basin.

The Āliamanu-Salt Lake community is considered a green neighborhood community, endowed with large stretches of park lands. The largest of the parks is Salt Lake District Park, home to various hiking trails that snake around the slopes of Āliamanu and Āliapa'akai craters and feature the remnants of the lake that once dominated the area. The former lake area has become the Honolulu Country Club golf course. Smaller parks also contribute to the Salt Lake landscape. Salt Lake Municipal Park hosts a People's Market on Saturday mornings where residents purchase fresh produce and fish. Hoa Aloha Park on Ala Ilima Street hosts weekend soccer game, and serves as an after-school hang-out spot for students.

Aloha Stadium, just west of Āliamanu, although used primarily for college and NFL football games, hosts various events including sports events, concerts, and the largest weekly swap meet in the state for residents and visitors islandwide (see Figure 4-3).

Moanalua

Bordering the Āliamanu-Salt Lake and Māpunapuna communities and lying less than a quarter-mile from the Moanalua Freeway, is the community of Moanalua. Moanalua is bounded on either side by two mauka-makai ridges that extend up into the Ko'olau Mountain Range. Six small streams run through Moanalua Valley, which have a minor effect on mauka-makai travel. The Moanalua Freeway and Moanalua Road are the only major Wai'anae-Koko Head transportation corridors within the Moanalua neighborhood and are located along the most makai boundary of the community. The Moanalua Freeway essentially blocks and disassociates the Moanalua neighborhood from transportation corridors and resources on the makai side of the Freeway. However, Moanalua residents travel across the limited transportation corridors of Pu'uloa Road and Funston Loop to access the Māpunapuna area for many consumer and business needs.

Tripler Army Medical Center, visible as the large pink-colored facility on the Mauka-Koko Head side of the valley, is the principal U.S. military medical facility for Asia and the Pacific Basin. Moanalua Medical Center is located approximately a half-mile Wai'anae of Tripler Medical Center, and is the only Kaiser Permanente Hospital Facility in Hawai'i. Other Kaiser facilities are smaller clinics, making the Kaiser Moanalua facility a major employment center and regional and islandwide for medical services.

The privately owned and operated Moanalua Gardens Park is a renowned park known for hiking. It also hosts major hula festivals such as the historically noteworthy Prince Lot Hula Festival. The globally famous advertising icon, "the Hitachi tree", a large monkeypod tree used by the Hitachi Corporation as a corporate symbol since 1973, is also located within the Moanalua community.

Section IV – Ke'ehi Interchange to Iwilei

Kalahi-Pālama

Kalihi, Pālama, and Iwilei, all part of the PUC DP, are the only communities within this section. Other nearby areas, which are strictly business areas, include Honolulu Harbor, Kapālama Military Reservation, and Sand Island. Kalihi is located between H-1,

Kapālama Canal, Honolulu Harbor/Ke'ehi Lagoon, and Kalihi Stream. Kalihi has a number of sub-areas or neighborhoods, including Kalihi Kai (south of Dillingham Boulevard), Kapālama (north of North King Street), and Kamehameha IV (the far western area). Pālama is the neighborhood just east of Kalihi between H-1, Nu'uanu Stream, Dillingham Boulevard, and Kapālama Stream, which includes Major Wright Housing. Iwilei is an industrial and commercial area south of Pālama that has few households. Because these communities are interrelated and in close proximity to each other, they are discussed as one neighborhood.

Historically, Kalihi-Pālama was a residential neighborhood comprised of middle- and upper-class Hawaiians and part-Hawaiians. By the 1900s, the area was settled by workers moving off the plantations and later by residents from Downtown and Chinatown moving to the suburbs. As Honolulu has grown, Kalihi-Pālama has become part of the town and less of a suburb. It is also known as an area for recent immigrants to settle and get established before moving into the newer suburbs.

Due to an abundance of transportation corridors in and out of the neighborhood, the community functions as a gateway to Downtown and Waikīkī, and is often highly congested as a result. The transit alternatives would be placed in one of the three main east-west thoroughfares: Nimitz Highway, Dillingham Boulevard, or North King Street. A transit center already exists on Middle Street and expansion is planned, indicating that the area will continue to function as a public transportation hub. Besides the H-1 Freeway on the northern edge of the community, Nimitz Highway is the next most heavily used transportation corridor to and from Downtown.

Most of the community is organized in a traditional block-grid pattern of streets consisting primarily of established commercial and business districts, public housing, and single- and multi-family housing. Business districts line the length of King Street, Dillingham Boulevard, and Nimitz Highway, and to lesser extents along the mauka-makai arterial streets such as Waiaikamilo Road, Kalihi Street, Mokauea Street, Pu'uhale Road, and Sand Island Access Road.

Generally, residential housing is more prevalent in the mauka areas and commercial and industrial businesses are more prevalent in the makai areas, including along the streams (Kalihi Stream and Kapālama Canal). Overall, the Kalihi-Pālama community is largely self-contained. The following is a summary of the conditions in this community's neighborhoods:

- Kalihi's core, between Dillingham Boulevard and H-1, is primarily a residential area with supporting community businesses and shopping centers. Many of the homes were originally single-family, but are now inhabited by multiple or extended families. Small apartment buildings are also present. This area is three-quarters Asian with Filipino and Chinese making up the bulk of that population segment.
- Kalihi Kai consists primarily of mixed industrial-commercial uses (see Figure 4-3). Businesses in this area include major wholesale and distribution facilities, manufacturing, auto repair shops, machine shops, small grocery stores, restaurants,

and bars. Some residences remain, primarily consisting of two- and three-story walk-up apartments and a few single-family units. However, these forms of residences are in the process of transitioning to mixed-use industrial or commercial establishments. The population in this area is dominated by Filipinos.

- Iwilei is dominated by commercial and industrial land uses. Previously, the area was dominated by pineapple canneries but is being redeveloped as a box-box (Costco, Home Depot, Best Buy) commercial area with office buildings and restaurants, making it a regional area for shopping.
- Pālama is dominated by medium-sized apartment buildings and public housing. The population in this area is diverse, but there is a marked population of Vietnamese and Samoans in the Mayor Wright Housing area and a Chinese population in the area nearest downtown between Liliha Street and Nu‘uanu Stream.

Kalihi-Pālama has considerably higher crime rates and more public assistance recipients compared to other regions of O‘ahu, which requires neighborhood social service programs to focus on managing these challenges and addressing neighborhood concerns. O‘ahu Community Correctional Center is conspicuously located in the heart of the region’s densely populated community, on the corner of Dillingham and Pu‘uhale Roads. Discussion of potentially relocating correctional facility to a less-densely populated area outside of the Kalihi-Pālama neighborhood has taken place over the years.

In 1925, Pālama Settlement, a project devoted to bring medical care to those who cannot afford it, moved to its present location, Wai‘anae of Nu‘uanu Stream, with nine buildings spread over eight acres of land on Vineyard and Pālama streets. Over the years, a medical clinic, an outpatient clinic, and the Strong-Carter Dental Clinic were established along with annual circuses, athletic competitions, social and community service clubs, boardinghouses for women, and a preschool. Civil rights and anti-poverty legislation brought large amounts of federal monies to Pālama Settlement for local programs geared to at-risk youth and community development. Some of the current programs include:

- Pakolea, a behavior modification program built around sports participation and academics
- An in-community treatment program that aids court-referred youth offenders
- Neighborhood Development, an advocacy program for the community, particularly residents of nearby public housing projects, Mayor Wright Homes and Ka‘ahumanu Homes

The Pālama Settlement continues to exist as a nonprofit, nongovernmental organization dedicated to helping needy families and at-risk youths.

Community recreation opportunities include:

- Kalākaua Recreation Center, centrally located in the heart of Kalihi between Kalihi Kai Elementary School and Kalākaua Intermediate School. This center is home to various recreational and athletic activities and facilities frequented primarily by neighborhood residents. Part of the center, Kalākaua Gym, is a renowned training facility for boxers and kick boxers and is used by athletes region-wide.

- Once an early 70s roller skating rink and located within a few blocks of Downtown, ʻAʻala Park Skate Park is one of the oldest skate facilities in Honolulu and draws region-wide skaters.
- A marina off of Sand Island Access Road
- A canoe racing facility nearby Keʻehi Lagoon
- Sand Island Beach Park, an 87-acre recreational park facility located on Sand Island.
- The Bishop Museum, located mauka of the H-1 Freeway, is considered the premier museum of the Pacific, housing an extensive collection of Hawaiian artifacts and royal family heirlooms of Hawaiian royalty Princess Bernice Pauahi Bishop (see Figure 4-3).

In terms of cultural resources and activities, a number of ethnic shops, restaurants and eateries cater to the local population in the surrounding commercial areas. Nimitz Highway or areas near the highway lack cultural or ethnic festivals, celebrations, or parades, with the exception of the Aloha Run which is held on Nimitz Highway. The annual Kalihi Christmas Parade is held on North King Street. Kau-maka-pili Church, originally located in Downtown until it burned down in 1900, was reconstructed on the corner of King Street and Pālama Street in 1911. An annual Palm Sunday Parade starts at the original location at Smith Street and Beretania Street and proceeds to its present location. "Salute to the Troops" is hosted by the Bishop Museum as a tribute to Hawaiʻi's armed services. The harbor area, located near or at the mouth of Nuʻuanu Canal, is used for the traditional activity of pole fishing, but because the streams are contaminated with industrial and urban pollution, pole fishing is unfavorable in this area and consumption of its fish is not recommended.

Section V – Iwilei to UH Mānoa

Downtown

The Downtown area consists of the Capitol District, the Central Business District, Chinatown, and the waterfront (Figure 4-2).

The Downtown area was the site of the first port operations in Honolulu and has predominantly been the seat of County, State, and Federal governments. In 1845, the last son of Kamehameha the Great, Kamehameha III, moved the capital of the Kingdom of Hawaiʻi from Lahaina, Maui to Honolulu. In the decades that followed, Honolulu began to take on a modern appearance as the monarchy erected a number of stately buildings in the city center, including St. Andrew's Cathedral, ʻIolani Palace, and the Supreme Court building, Aliʻiolani Hale. Following the social and political influence of the missionaries, Downtown Honolulu soon became the center of Hawaiʻi's commerce. Currently, Downtown is mostly organized into a traditional, block-grid pattern of streets consisting of condominiums and apartments interspersed throughout established commercial, civic, and business districts, historic areas, and oceanfront harbor resources.

The historic Chinatown district; an area frequented by visitors and residents islandwide, is a source for unique imported merchandise and fresh produce (see Figure 4-3). A few square blocks of Chinatown have recently been revitalized to house art galleries, cafes, and restaurants. On the first Friday of every month Chinatown hosts an evening festival

with extended hours for downtown art galleries, museums and studios that are open to the public. This provides an opportunity to experience Honolulu's artistic and cultural resources including live music, street entertainment, open cafes and bistros, and antique stores.

The Central Business District is the epicenter of commerce for all of Hawai'i and Polynesia, and as such, is a major employment center and destination. Likewise, the Capitol District is also an employment center and major destination for visitors and locals islandwide, both for its historic resources and government services (see Figure 4-3).

The waterfront area houses Aloha Tower, the Hawai'i Maritime Center, government services, and port-related business and commerce (see Figure 4-3). Cruise ships dock next to Aloha Tower, adding more visitors to this location.

Aloha Tower Marketplace is the only place on O'ahu that combines visitor attractions, shops and restaurants with a working commercial harbor facility. The ocean views, live local entertainment, cuisine, and shopping draw locals and visitors. Architects carefully designed the Marketplace to complement its beautiful location at Honolulu Harbor. The designer even selected a special shade of green for the roof tiles to blend in with the waterfront and the 8,750 square-foot, two-tiered food court designed like a ship's deck. "Territorial-style" architecture reminiscent of Honolulu in the 1930s and 1940s is also showcased throughout Aloha Tower Marketplace.

Restaurant Row is a popular regional recreation center and gathering place. Located at the corner of Punchbowl Street and Ala Moana Boulevard near the Kaka'ako neighborhood district, it is home to a movie theater, restaurants, and small retail stores. Office space is also located on the upper levels. This area is a noteworthy generator of employment and recreation trips.

The Fort Street Mall, a former street converted to a pedestrian mall, extends mauka-makai for five blocks from Beretania Street to Nimitz Highway and is a major gathering place for Hawai'i Pacific University students, downtown workers and residents, social services recipients, and Hotel Street bus riders. Next to the mall, Wilcox Park hosts bi-weekly open markets that offer vegetables and local crafts to Downtown residents and commuters.

Downtown also hosts a variety of festivals and parades at various locations. Historical commemorations occur at Kawaihao Church for Ali'i Sunday. Lei draping is held at the State Capitol for Father Damien's Birthday and Lili'uokalani's Birthday. 'Iolani Palace is a place for commemorative gatherings and non-recurring events that affect the Native Hawaiian community. Overthrow Day is held on South King Street. Downtown Hoolaulea is held on Bishop Street. Mardi Gras, Chinese New Year, and St. Patrick's day celebrations are held on Nu'uanu Street.

Ala Moana-Kaka'ako

This area is generally bound by South King Street to the north, Kalākaua Avenue to the east, the Pacific Ocean to the south, and South Street to the west. The Ala Moana/Kākā'āko neighborhood area is known for its shopping and retail centers such as the Ala Moana and the Victoria Ward centers. The Ala Moana Center is one of Hawai'i's major shopping, entertainment, and dining destination, with over 260 stores and venues in a unique indoor/outdoor environment located within walking distance of most Waikīkī hotels (see Figure 4-3). The Ward Warehouse, located 'Ewa of the Ala Moana Center, is a major employment and commercial center consisting of retail stores, movie theaters, restaurants, and live performances (see Figure 4-3). In addition to these retail centers, some of the last auto-body shops in town can be found along Queen and Kawaiaha'o streets. This area consists primarily of one- and two-story warehouses with light industrial uses.

The two residential communities within this area, Ala Moana and Kaka'ako, are separated by Ward Avenue and have separate and distinct characteristics. They also have many similarities, including the following: over 90 percent of the buildings have five or more units, residents are concentrated along Kapi'olani Boulevard and mauka of it, residents have a depressed level of income relative to islandwide, and both areas have a standard level of ethnic diversity for O'ahu, but relatively more Japanese and Korea ethnicities. In the Koko Head portion of the Ala Moana community between Kalākaua Avenue and Ke'eaumoku Street, several high-rise apartments and commercial buildings create a city-life ambience. The area between Ke'eaumoku and Pensacola Streets consists primarily of two- and three-story walk-up apartment complexes with narrow streets, creating a quiet residential environment. Several high-rise condominiums are currently under construction within this area as part of the State, designated Kākā'āko Community Development District redevelopment efforts. This includes 450 acres of Kākā'āko land located mauka of Ala Moana Boulevard, makai of King Street, and between Pi'ikoi and Punchbowl Streets. The redevelopment of this area will likely change the neighborhood's existing character.

In addition to the Ala Moana and Victoria Ward shopping centers within the Ala Moana/Kaka'ako region, activity centers include the Ala Moana Regional Park/Ala Moana Beach Park, Kewalo Basin Park, Kākā'āko Water Front Park, Mother Waldron Park, Neal Blaisdell Center, and the Hawai'i Convention Center. The Ala Moana Regional/Beach Park is in the vicinity of the Ala Moana and Victoria Ward shopping centers (see Figure 4-3). The Ala Moana Regional/Beach Park is a heavily used regional and islandwide recreational resource and is a prime attraction for visitors and local residents alike. Islandwide residents visit the three-quarters-of-a-century-old Ala Moana Regional/Beach Park for a range of activities including surfing, canoeing, fishing, sunbathing, swimming, picnicking, walking, running, bicycling, rollerblading, community gatherings, and field sports in the large grassy areas. Various ethnic society and cultural organizations also have picnics at Ala Moana Regional/Beach Park. The largest Fourth of July fireworks show is held on Magic Island within the park. Festivals and parades are also hosted at the Ala Moana Beach Park, including: the Filipino Fiesta and Parade, Dr. Martin Luther King Parade and Celebration, Samoan Park Day,

Taiwanese Cultural Festival, Slack Key Guitar Festival, Kamehameha Day Parade and Celebration, Aloha Week Festival and Parade, and Fourth of July fireworks.

Kewalo Basin, a unique marina, is located next to Ala Moana Regional/Beach Park and is one of the only marinas in the PUC to charter fishing tours, primarily marketed to tourists. Ala Wai Yacht Club offers a recreational boat harbor for boat owners to dock their vessels.

Neal Blaisdell Center consists of an 8,800-seat circular arena, a 2,200-seat concert hall, and an 85,000-square-foot exhibition hall (see Figure 4-3). The Center is a prominent venue for a variety of cultural events, product shows, and general entertainment. Located on Ward Avenue, it annually hosts the Cherry Blossom Festival, the Honolulu Symphony, and the Hawai'i International Taiko Festival.

The Hawai'i Convention Center is a 200,000-square-foot exhibition hall located in the Koko Head-mauka corner of the Ala Moana Neighborhood, bordering Waikīkī.

Kaiser's Honolulu Clinic is another major activity center, located on the corner of King and Pensacola Streets.

Within walking distance of Downtown and just Wai'anae of Kewalo Basin, Point Panic in Kākā'āko Waterfront Park is a famous bodysurfing spot and one of the only places to bodysurf in town. Employees in the Downtown and Kākā'āko areas are within walking distance and sometimes utilize this recreational resource during their lunch breaks.

Makiki-Tantalus

The Makiki/Lower Punchbowl/Tantalus neighborhood area extends mauka from North King Street along Tantalus/Roundtop Drive to Pu'u Ualakaa and Makiki Heights. The H-1 Freeway essentially divides Makiki in half, with the makai section extending to King Street and the mauka section extending to Nahoa Street. Makiki is further bounded by Punchbowl Crater to the west and Punahou to the east (Figure 4-2). Tantalus is primarily an upper-class single-family neighborhood in the hills mauka of Makiki.

The Makiki community is primarily residential and homogeneous in character. Much of the community is organized into traditional, small, block-grid patterns of narrow streets consisting of walk-up apartments, high-rise condominiums and apartments, and some single-family homes. The commercial districts are located along King and Wilder Avenue. The commercial district, parks, and schools along King Street and throughout the neighborhood generally function as a place for informal gatherings while simultaneously providing for the community's everyday needs.

Unique, natural resources found along Tantalus/Roundtop Drive draw visitors from surrounding communities and region-wide for various mountain-road and forest-related activities such as bicycling, hiking, and picnics. Tourists travel to Round Top Drive to get a glimpse of Diamond Head and the city lights of Waikīkī and Honolulu from the most popular, mountain-scenic lookout point in the PUC.

Area cultural and community resources include:

- Makiki District Park, which provides athletic facilities including a skate park, swimming pool, and community meeting facilities.
- The Contemporary Museum (TCM), Honolulu, in upper Makiki. This museum offers interaction with art and artists in a unique Island environment complete with a large hillside Zen garden, an outdoor café, and multiple exhibition halls.
- The Hawai'i Nature Center in Makiki established in 1981 by Outdoor Circle. School children islandwide and adults have participated in environmental education programs at the center. Guided interpretive hikes, nature adventures, and earth care projects also take place at the center.
- The National Memorial of the Pacific, located in Punchbowl Crater.
- Punahou Carnival, hosted by the Punahou School for one weekend during the month of February.
- Thomas Square, which occupies the entire block between Ward Avenue and Victoria Street between Beretania and King streets, hosts to a number of community events including craft fairs and cultural festivals.
- The Honolulu Academy of Arts, across King Street from Thomas Square, boasts a collection of over 40,000 works of art from cultures around the world. The Academy provides studio art classes and workshops and is the home to a renowned Asian collection.

Waikīkī

The Waikīkī neighborhood area is bounded by water along three sides of its approximate two-mile length (Figure 4-2). The Ala Wai Canal, which terminates into a pond at Kapahulu Boulevard, defines Waikīkī's mauka (inland) boundary and is the dividing line between Waikīkī and its neighbors. Waikīkī literally meaning *spouting water* and is named for the wetlands later drained to form the Ala Wai Canal. The canal restricts access in and out of Waikīkī and limits vehicle and pedestrian access to three bridges on the Wai'anae side. Much of Waikīkī is organized around two major streets, Kūhiō and Kalākaua Avenue, which run the length of the community in the Wai'anae/Koko Head direction. Kūhiō and Kalākaua Avenue connect to Kapahulu Avenue, which provides access to surrounding neighborhoods. Ala Wai Boulevard, a one-way street in the Wai'anae direction, offers additional Waikīkī access from the bordering Kapahulu and Kapi'olani Park areas. A third street, Ala Wai Boulevard, is a one-way in the Wai'anae direction to counter Kalākaua, but does not include any commercial establishments. The local streets within the community are organized in a traditional, small block-grid pattern of narrow, often one-way streets.

Waikīkī is a world-renowned tourist destination whose economic stimulus has been credited with major contributions to the local economy. Much of Waikīkī consists of upscale retail markets resembling many other tourist destinations throughout the world. Sufficient tourist amenities exist throughout much of the two-mile strip of land that constitutes Waikīkī, allowing some tourists to avoid venturing elsewhere on the island.

Waikīkī's population is largely comprised of tourists. Locals who live in Waikīkī often do so because they also work there. Locals typically reside in rental units clustered along the Ala Wai Canal and on the far Wai'anae and Koko Head sides bordering the edges of Kapahulu and Ala Moana neighborhoods. Residential elements of Waikīkī are predominantly comprised of two-to-three story apartments and high-rise condominiums, with very few single- or multi-family homes. Although there is a noteworthy lack of large commercial stores that typically cater more to the local populace (e.g., grocery, hardware, and big box stores), Waikīkī's commercial areas contain most of the retail services required to meet the everyday needs of both residents and visitors.

Locals living outside Waikīkī are less likely to visit due to high parking rates and overpriced services, except during cultural or social events.

Neighborhood attractions and recreational opportunities include:

- Waikīkī beaches, well known for surfing, hula, and other various beach activities.
- Annual festivities and parades.
- Sunset on the Beach, monthly free movies on the beach attract locals and tourists alike.
- Parks in and near Waikīkī include Fort DeRussey and Kalākaua Park (Gateway), both located toward the Wai'anae side of Waikīkī, and Kapi'olani Park to the east of Waikīkī (see Figure 4-3).
- The Honolulu Zoo and Aquarium, just east of Waikīkī along Kapi'olani Park (see Figure 4-3).
- International Market Place, a major tourist shopping destination, with many small retail shops catering primarily to tourist; however, locals sometimes visit to take advantage of large discounts that can be haggled with some vendors.

McCully/Mo'ili'ili

The McCully/Mo'ili'ili Neighborhood Board area is bounded by H-1 on the mauka side and the Ala Wai Canal on its makai side (Figure 4-2). The McCully area was named for Lawrence McCully, appointed associate justice of the Supreme Court by King Kalākaua and the developer of the Punahou tract as a subdivision. In Pre-Contact times the Mo'ili'ili area was previously named *Kamoiliili*, or "the pebble lizard," after a mythical lizard-god that had once dwelled in the vicinity.

Much of Mo'ili'ili houses subterranean streams, caverns, and springs that overflow and flood during periods of heavy rains. Three streams run mauka to makai and eventually empty into the Ala Wai Canal. Traditionally, these streams marked the boundaries between the ahupua'a land divisions. However, these boundaries are generally no longer recognized today and are obscured by contemporary development.

Much of the McCully/Mo'ili'ili area consists of small walk-up apartment buildings; although residential high-rises (primarily along Kapi'olani Boulevard) and single-family homes (primarily in mauka area) also exist. Commercial establishments can be found along major thoroughfares within the area. Most of the commercial areas consist of

neighborhood-oriented shops, with the exception of the high-rise Century Center along Kalākaua Avenue. The McCully/Moʻiliʻili community has one centrally located business district along the length of King Street, and smaller business districts exist along University Avenue, Kapiʻolani Boulevard, and McCully Street. The area around the intersection of University Avenue and King Street is commonly known as the "University Area". This area contains a movie theater, restaurants, pubs, and sidewalk cafes that largely serve the University/Moʻiliʻili residential areas and the UH Mānoa student population. Because the University Area is within a half mile of the 10,000-seat Stan Sheriff Center, many families can also be found visiting the area before or after UH Mānoa athletic events. The well-established commercial district along King Street also functions as an informal gathering place and serves consumer needs.

Forty years ago, Moʻiliʻili was home to a major community gathering center, Honolulu Stadium, located along King and Isenberg streets. Opened in 1926 by Wallace R. Farrington and demolished in 1976, it was the primary sports venue in Hawai'i preceding the Aloha Stadium and home to University of Hawaiʻi at Mānoa and high school football games, baseball games, polo matches, and stock car racing, among other events. Famous athletes who competed in Honolulu Stadium include Babe Ruth, Joe DiMaggio (who hit a home run out of the park in 1944) and Jesse Owens. Irving Berlin performed at Honolulu Stadium in 1945. Elvis Presley performed in 1957 and Billy Graham inspired a sold out crowd a year later. Locals grew to love Honolulu Stadium not only for its events but also for its food, and as a result, the surrounding areas sprouted supporting commercial amenities including many family–owned-and-operated eateries. By the early 1970s, the largely wooden structure had reportedly become termite-infested and had to be replaced after its long service to the community. A public park, Stadium Park, now sits in this location.

Because the McCully/Moʻiliʻili neighborhood is old and well established, many cultural events continue to be held in this area, such as Bon dances. These traditional Japanese dances are generally held during the summer months at the Moʻiliʻili Community Center, where many other community classes and events are held. The Ala Wai Challenge is held at Ala Wai Park and the Japanese Cultural Center hosts several ethnic festivals, including Children's Day, Ohana Festival, and Hawaiʻi International Taiko Festival. The Japanese New Year's Festival is also held at Stadium Park and the Moʻiliʻili Christmas Parade is held along South King Street.

The University area is the Island's epicenter for natural foods, with organic food stores such as Down to Earth (located next to the Moʻiliʻili Community Center) and kokūa Market (located near the intersection of University Avenue and King Street).

Mānoa

The Mānoa Neighborhood Board area is bordered by the mountainous valleys and ridges of the Koʻolau Ridge and Waahila Ridge along its mauka boundary. Mānoa Stream is Koko Head of the community and the Honolulu Watershed Forest Reserve borders its ʻEwa side (Figure 4-2). Mānoa includes the communities of Mānoa Valley and Lower Mānoa. Natural topographical features that divide the valley include the historically

recognized Native Hawaiian valley division of Mānoa-ali'i, or "royal manoa," (west of a line from Pu'u Luahine to Rocky Hill, situated above Punahou School and Mānoa Stream) on the 'Ewa side of Mānoa Valley where the chiefs lived; and Mānoa-kanaka, or the commoners side, land makai and Koko Head, opposite Mānoa-ali'i. There are only two primary mauka to makai transportation corridors in and out of Mānoa Valley: University Avenue to East Mānoa Road on the Koko Head side, and Punahou Street to Mānoa Road on the Wai'anae side. Only Lowrey Avenue, located in the middle of the valley, makes its way all the way across the valley floor in a Koko Head to Wai'anae direction. The H-1 Freeway acts as the dividing line between Mānoa and Mo'ili'ili.

Mānoa is a large community but the transit alternatives only enter it in the far southeastern point at the University of Hawai'i-Mānoa. This area of Mānoa, near University Avenue and the H-1 Freeway, is more closely associated with Mo'ili'ili than the bulk of Mānoa, which is mauka of the university.

The bulk of Mānoa is characterized by low-density residential housing along the Ko'olau Ridge. Lower Mānoa is dominated by the presence of the University of Hawai'i at Mānoa (UH Mānoa) (see Figure 4-3). The UH Mānoa campus extends from the H-1 for approximately a half mile up into Mānoa Valley. As the largest college campus in the State with 20,644 students during the 2005 – 2006 school year, it is regarded as an islandwide resource for educational and employment opportunities. Consumer resources within the Mānoa community include the Mānoa Marketplace, a small commercial enclave with grocery stores and other important services in convenient proximity to residences in the UH Mānoa area and the valley. This marketplace is not located near the transit alternative alignment.

A number of private schools are located in Mānoa and the public elementary schools in Mānoa are also highly regarded. Punahou School is a private kindergarten through twelth grade (K-12) school located on the Wai'anae side of Mānoa Valley at the base of the hill Pu'u o Mānoa. With a student body that averages 3,700 islandwide students annually, Punahou School is one of the largest and highly rated independent schools in the United States. Mid-Pacific Institute is a college preparatory school for grades Pre-K and K-12, offering programs in the International Baccalaureate program and the Mid-Pacific School of the Arts (MPSA) diploma. Mary Knoll School is located near Punahou School and the University High School is located across the street from UH Mānoa.

Recreational and cultural resources in Mānoa include:

- The 10,000-seat Stan Sheriff Sports Center, which hosts numerous UH and non-UH athletic events. UH Mānoa's athletic complex is also open to the public for athletic and dance educational and training opportunities.
- The Mānoa Falls hike, a popular rainforest hike.
- Mānoa Recreation Center, located in the middle of the valley, has ball fields, a swimming pool, and other athletic facilities
- Lyon Arboretum, consisting of nearly 200 acres located next to the Mānoa Falls hiking trail, is the only University botanical garden in the United States located in a

tropical rainforest. It is also the one of the only easily accessible tropical rainforests on O'ahu and serves approximately 34,000 tourists and local visitors per year.
- The annual Punahou Carnival, hosted by Punahou School, lasts one weekend in the beginning of February and draws residents from throughout O'ahu.

Diamond Head-Kapahulu

The Diamond Head/Kapahulu/St. Louis Heights neighborhood area encompasses the Mānoa-Pālolo Drainage Canal, Ala Wai Canal, Diamond Head State Monument and Kapi'olani Regional Park within its most makai boundary (Figure 4-2).

The base of Diamond Head is embroidered with affluent single-family homes and condominiums. At Kupikipikio (Black Point), the portion of the Diamond Head community that swoops out into the Pacific Ocean, the late billionaire Doris Duke built Shangri-La in 1937. Kapahulu is a lively community with houses along neat, hilly streets that have personality and character. The nearly 2-mile stretch of busy Kapahulu Avenue from the H-1 freeway to Ala Wai Boulevard supports an eclectic mix of restaurants and other businesses. St. Louis Heights is a tight–knit, hillside community of older, established single-family homes.

Although this neighborhood does not enter the study corridor, recreational facilities located adjacent to the alignment may be influenced by the proposed project. Recreational and cultural resources in the area include:

- Diamond Head Crater, O'ahu's most famous natural landmark with hiking trails to scenic views of Waikīkī, Ko'olau Mountains, and Moloka'i.
- Many cultural festivals and events that take place in Kapi'olani Park and Kapi'olani Bandstand area (located just outside of Waikīkī) and often draw more locals than visitors.
- The 42-acre Honolulu Zoo, located at Kapi'olani Park (see Figure 4-3).
- Waahila Ridge State Recreational Area, a 50-acre, pine-forested picnic site and hiking spot nestled in the hillside of St. Louis Heights.

Demographic Characteristics

Population and Ethnicity

Appendix B lists the demographic characteristics for the State of Hawai'i, O'ahu, the Development Plan (DP) Areas ('Ewa, Central O'ahu, and Primary Urban Center) within the project study corridor, and select Census Tracts and Block Groups in the project vicinity.

Population

The Primary Urban Center (PUC) is by far the most populated DP Area. In 2000, its resident population was 419,422, which is nearly 48 percent of the island total. The PUC DP Area is also anticipated to support a housing and population increase of approximately 17 percent by 2030. In the 1990s, population in other parts of the island increased at a faster rate than in the PUC. This is due in part to a substantial increase of

affordable housing in the ʻEwa and Central Oʻahu DP Areas during this time period, which shifted population growth from the PUC to these outlying regions. The State of Hawaiʻi and City and County of Honolulu are also directing growth to the ʻEwa region and the City of Kapolei as Oʻahu's Secondary Urban Center or "Second City".

Table 4-1 shows the City and County Department of Planning and Permitting (DPP) year 2030 population projections by Development Plan (DP) Area.

Table 4-1. Projected Population Summary

Development Plan Area	2000	Forecast		
		2030	Change	Percent Change
PUC	419,422	489,389	69,967	17%
ʻEwa	68,696	184,612	115,516	169%
Central Oʻahu	148,208	189,599	41,391	28%
Oʻahu Total	**876,156**	**1,117,300**	**241,144**	**28%**

Source: Department of Planning and Permitting, City and County of Honolulu. Accessed *http://honoluludpp.org/planning/ResearchStats.asp* on March 15, 2006.

The State and City's developed a policy encourages growth in the PUC and Kapolei to minimize suburban sprawl and the associated costs of extending public infrastructure and services into undeveloped areas. The goal of preserving open space ("keeping the country country"), given Oʻahu's limited land area, is not only a governmental policy, it is a widespread public sentiment that was frequently repeated during City planning activities.

Consistent with the goal of concentrating new growth in the PUC and ʻEwa DP Areas, most population growth between now and 2030 is forecasted to occur in the study corridor. As shown in Table 4-1, the fastest growing area will be the ʻEwa DP Area. Over 184,612 people will live in the ʻEwa area in 2030 – a growth of up to 169 percent or 115,516 people. The Central Oʻahu population is projected to increase from 148,208 in 2000 to 189,499 in 2030 – a gain of 28 percent or approximately 41,391 people (DPP, 2006). Although the PUC DP Area is projected to grow by only 17 percent between 2000 and 2030 the total number of people will grow by nearly 70,000.

Table 4-2 shows population growth by neighborhood from 1990 to 2000. Oʻahu experienced a relatively slow population growth of 5 percent. During the 1990s, growth was not consistent islandwide. Certain neighborhoods experienced substantial population growth and others experienced a slight decline.

For example, Waipahu and ʻEwa grew by 21.9 and 97.4 percent, respectively, during the 1990s. These neighborhoods are in the western part of the corridor where former agricultural land is being converted to urban uses. Housing in ʻEwa and Central Oʻahu tends to be more affordable than in the PUC, resulting in a much higher growth rate in these outlying areas compared to the rest of the island. This trend is not expected to

change, because most new housing will be built in ʻEwa in accordance with the approved ʻEwa DP.

Table 4-2. Population Growth by Neighborhood (1990 to 2000)

Neighborhood	Population		Change	Percent Change
	1990	2000		
Section I. Kapolei to Fort Weaver Road				
ʻEwa	26,898	53,099	26201	97.4%
Makakilo/Kapolei/Honokai Hale	15,863	15,545	-318	-2.0%
Section II. Fort Weaver Road to Aloha Stadium				
Waipahu	51,174	62,402	11228	21.9%
Pearl City	46,928	47,794	866	1.8%
Aiea	32,553	31,221	-1332	-4.0%
Section III. Aloha Stadium to Middle Street				
Āliamanu/Salt Lake/Foster Village	37,498	36,572	-926	-2.5%
Airport	26,762	18,163	-8599	-32.1%
Moanalua	12,256	11,748	-508	-4.1%
Section IV. Middle Street to Iwilei				
Kalihi-Pālama	40,147	37,987	-2160	-5.4%
Section V. Iwilei to UH Mānoa				
Ala Moana/Kakaʻako	10,978	14,186	3208	29.2%
Downtown	11,601	14,575	2974	25.6%
Makiki/Tantalus/Lower Punchbowl	29,416	30,145	729	2.5%
McCully/Moʻiliʻili	28,466	26,122	-2344	-8.2%
Waikīkī	19,768	19,720	-48	-0.2%
Mānoa	21,496	21,184	-312	-1.5%
Total Oʻahu	**836,231**	**876,156**		**4.8%**

Note: 2030 projections for Neighborhoods are derived from subarea 2030 projections.

Source: Department of Planning and Permitting, City and County of Honolulu. Accessed *http://honoluludpp.org/planning/ResearchStats.asp* on March 13, 2006.

Growth areas in the PUC were clustered in Ala Moana/Kakaʻako and Downtown (Table 4-2). Population growth in these neighborhoods resulted mostly from development of mid- to high-rise apartment buildings. Moderate growth occurred in the Pearl City and Makiki/Tantalus/Lower Punchbowl neighborhoods. Many of the other neighborhoods experienced no growth or decreases in population from 1990 to 2000 within the PUC, (e.g., ʻAiea, Mānoa, Kalihi-Pālama, Moanalua, Āliamanu/Salt Lake/Foster Village, Waikīkī, McCully/Moʻiliʻili, and the Airport neighborhoods). Some of these neighborhoods are older or built-out communities that experienced little redevelopment during the 1990s. Year 2030 population projections by neighborhood are unavailable, but the overall trend of growth between 1990 and 2000 within the neighborhoods of the

PUC and ‘Ewa DP Areas seem to be consistent with projected growth within the DP Areas.

Ethnicity

The following are the different race categories according to 2000 Census Bureau: American Indian or Alaska Native (AIAN), Asian, Black or African American (Black), Native Hawaiian or Other Pacific Islander (NHOPI), and White. Hispanic or Latino (Hispanic) data was also gathered. The racial characteristics for the project area are summarized in Table 4-3.

Table 4-3. Racial Characteristics Summary

Development Plan Area	Total Population	White	Black	AIAN	Asian	NHOPI	Other	Two or More
PUC	419,422	19.2%	2.1%	0.2%	54.8%	7.1%	1.0%	15.5%
‘Ewa	68,696	18.4%	2.3%	0.2%	46.0%	7.5%	1.3%	24.2%
Central O‘ahu	148,208	17.6%	4.4%	0.3%	49.0%	6.9%	2.0%	19.8%
O‘ahu Total	**876,156**	**21.3%**	**2.4%**	**0.2%**	**46.0%**	**8.9%**	**1.3%**	**19.9%**

Source: Department of Planning and Permitting, City and County of Honolulu. Accessed *http://honoluludpp.org/planning/ResearchStats.asp* on Mardh 15, 2006.

Each race category can be further detailed to include detailed race categories. For example, Chinese, Filipino, and Japanese are a few of the detailed race categories of the larger Asian race category. Detailed race data is available by census tract and is tabulated in Table B-1 of Appendix B.

The State of Hawai‘i is an unusual but increasingly common case, where traditionally defined “minority” populations make up the majority of the population. In Hawai‘i, Asians comprised 42 percent of the overall state population and 46 percent of the overall O‘ahu population in 2000, and those who classify themselves as “two or more races” made up 21.4 percent of the state population and 19.9 percent of O‘ahu’s population. The racial makeup of the ‘Ewa, Central O‘ahu, and PUC DP areas is similar to the general population of O‘ahu and the State. The exceptions are that the ‘Ewa and Central O‘ahu DP areas have a higher proportion of Filipinos and the PUC DP area has a higher proportion of Chinese and Japanese. Figure B-1 in Appendix B shows population and ethnicity data by block group in the study corridor.

Section I – Kapolei to Fort Weaver Road

The recent and rapid population growth in the ‘Ewa DP area, particularly in Villages of Kapolei (residential area adjacent to Kapolei), appears to be characterized by demographics similar to that of the general population of O‘ahu and the State. The exception is that there seems to be a higher proportion of Filipinos in the ‘Ewa DP area compared to O‘ahu overall. ‘Ewa Villages and ‘Ewa Beach have relatively higher proportions of Filipinos than the rest of the study corridor which can be attributed to these communities as being ‘Ewa’s older communities.

Census Tract 86.06 Block Group 1 and Census Tract 86.04 Block Group 2, which represent Villages of Kapolei, have a slightly higher proportion of NHOPI in these two block groups compared to the other block groups in this section of the study corridor. Within these block groups, the Department of Hawaiian Home Lands (DHHL) Village Six (also called Maluohai) is the first housing development for Native Hawaiians in the "Second City". It consists of 226 residential units that were completed and occupied by new residents after the 2000 census data was compiled, which suggests that there were NHOPI already living in the community.

Census Tract 85 Block Group 1 had a slightly higher percentage of Whites than other block groups in this section. Census Tract 85 Block Group 1 represents the former Barbers Point Naval Air Station (currently Kalaeloa Community Development District), which closed in July 9, 1999. The Navy still maintains housing and recreational facilities at this site, but the site is currently in the process of redevelopment.

Section II – Fort Weaver Road to Aloha Stadium

2000 demographic characteristics of Pearl City and ʻAiea are more similar to each other than they are to Waipahu. Although somewhat diverse, Waipahu is predominantly Asian, particularly of Filipino decent, with some mixed races and a much larger proportion of Native Hawaiians than Oʻahu overall. Waipahu's history as a plantation community attributes to the ethnic diversity that exists today. Much of the plantation laborers were of Filipino decent, and today that demographic is reflected in a predominantly Filipino working-class population. There is a high proportion of NHOPI (12.3 percent) compared to the other neighborhoods in the study corridor. In particular, Census Tract 89.14 Block Group 2 (21.5 percent NHOPI), Census Tract 87.03 Block Group 1 (17.7 percent NHOPI), Census Tract 89.14 Block Group 1 (49.4 percent NHOPI), Census Tract 87.03 Block Group 2 (49.6 percent NHOPI), and Census Tract 87.02 Block Group 2 (17.3 percent NHOPI), located in the Waiʻanae end of Waipahu, have the highest concentration of NHOPI within this section of the study corridor. The high proportion of Samoan people attributes to the high proportion of NHOPI in these census tracts (see Appendix B).

Of all the neighborhoods within the study corridor, the neighborhood area of Pearl City has the highest overall proportion of Asians of Japanese decent (32.6 percent) with a noteworthy 40.3 percent Japanese in Census Tract 80.02. ʻAiea is similar to Pearl City with a relatively high proportion of Japanese (24.4 percent). Other racial demographics for Pearl City and ʻAiea are approximately identical to the islandwide percentage, making the area appear homogeneous relative to the rest of Oʻahu.

Section III – Aloha Stadium to Keʻehi Interchange

The ethnic makeup of Āliamanu/Salt Lake and Moanalua is more similar to each other than either to the Airport area. The Salt Lake and Moanalua communities, which are each almost completely surrounded by military installations, are home to many families of officers from the U.S. Air Force, Army, Coast Guard and Navy. However, the proximity to downtown attracts the downtown area's diverse workforce to reside in Salt Lake and Moanalua neighborhoods making the population similar to Oʻahu's general

population. Of all the census tracts within the study corridor, Census Tracts 68.06 and 67.01 have the highest proportion of Japanese population within the corridor.

Compared to O'ahu's general population, the Airport area differs as the nature of the predominantly military and industrial employment appears to skew the area's racial profiles.

Although only had 2.4 percent of O'ahu's the population identified themselves as Black, the Airport area tallied approximately five times as many (12.4 percent) reporting themselves as Black. Again, this is likely due to military influence. Census Tract 66 Block Group 9 and 74 Block Group 9 have the highest percentage of Black population in the corridor.

Notably, Asians accounted for only 11.3 percent of the population in the Airport area, compared to 46 percent islandwide, and Whites accounted for 61.5 percent of the population compared to 21.3 percent islandwide. All block groups that represent the Airport area are comprised of at least 52 percent or more Whites, except for two block groups: Census Tract 75.04 Block Group 1 and Census Tract 68.03 Block Group 1. Although Shafter Flats Hawaiian Homelands is within Census Tract 68.03 Block Group 1, the census tract data does not indicate that any NHOPI populations live in the area. Instead, there is a small population of Asians (18 out of a total population of 20 according to the 2000 Census data).

Section IV – Ke'ehi Interchange to Iwilei

Historically, Kalihi-Pālama was a residential neighborhood comprised of middle- and upper-class Hawaiians and part-Hawaiians. Today, the region is considered a melting pot of immigrants and cultures from Polynesia, Micronesia, the Phillipines, and Southeast Asia. Kalihi-Pālama has one of the highest percentages of immigrants and public housing on O'ahu. Kalihi-Pālama has a higher proportion of Asians (66.2 percent) and the highest proportion of Filipinos (42.1 percent) than any other neighborhood in the study corridor. Kalihi-Pālama is well known for its large Filipino community, but is also regarded to be a multi-ethnic working-class community that is home to a large proportion of recent immigrants from the Pacific, the Philippines, and Southeast Asia. Chinese, Japanese, and Samoan were the second, third and fourth next-most common detailed race groups, respectively. The communities of Kalihi-Kai and Kalihi-Waena (represented by Census Tracts 60 and 61, respectively) have the highest proportion of Filipinos in the study corridor. Areas of high NHOPI population percentages are also located throughout the section.

Section V – Iwilei to UH Mānoa

Downtown, Ala Moana/Kaka'ako, Makiki, McCully/Moilili, and Mānoa generally have the same racial characteristics to each other and to O'ahu overall, but each neighborhood is unique when defined by detailed race categories. Downtown is comprised of a high proportion of Chinese (20.4 percent) and Japanese (14.3 percent). Ala Moana/Kaka'ako is mostly Japanese (26.6 percent), but Chinese (12.2 percent) and Korean (12.4 percent) also prevail. Makiki/Lower Punchbowl/Tantalu is predominantly Japanese (22.5 percent). Mānoa and McCully/Moilili have the highest concentration of Japanese in

Section V (36.8 and 30.2 percent, respectively). The predominant White population (43.7 percent) in Waikīkī differentiates this neighborhood from the other neighborhoods in this section. Asians (38.8 percent) make up the second-most dominant with a majority of Japanese (16.3 percent) in the Asian race category.

Linguistic Characteristics

The following are definitions of linguistic categories according the 2000 Census Bureau:

- **Language Spoken at Home:** a person is considered to speak a language other than English at home if that person is five years or older and sometimes or always speaks a language other than English at home. This excludes if the language is spoken only at school or if speaking is limited to a few expressions or slang. Those who reported speaking a language other than English at home were asked to identify the language, which was then categorized by a Four-Group Classification as follows: Spanish, Other Indo-European languages, Asian and Pacific Island languages, and all other languages.
- **Ability to Speak English**: people five years or older who reported that they spoke a language other than English were asked to indicate their ability to speak English based on one of the following categories: "Very well", "Well", "Not well", or "Not at all."
- **Linguistically Isolated Household**: a household is classified as "linguistically isolated" if no household members age 14 years or over speak only English, and no household members age 14 years and over who speak a language other than English speak English "Very well". In other words, all members 14 years and over have some difficulty speaking English.

In addition to representing an area where traditionally defined "minority" populations make up most of the population (see *Ethnicity* section), O'ahu is also characterized by a high proportion of non-English speaking households, relative to overall United States rates. In O'ahu, 28.9 percent of the population speaks a language other than English at home, and 13.8 percent speaks English less than "Very well". The linguistic characteristics of the 'Ewa and Central O'ahu DP populations are similar to the general O'ahu population, while PUC DP has a higher proportion of households speaking a language other than English (34.8 percent) and of persons speaking English less than "Very well" (18.3 percent). Asian and Pacific Island languages represent 89.7 percent of the languages spoken at home other than English, and 94.7 percent of the instances where a person who speaks a language other than English speaks English less than "Very well". Table B-5 of Appendix B shows language characteristics by block group in the project corridor.

Section I – Kapolei to Fort Weaver Road

The linguistic characteristics of the rapidly growing 'Ewa DP population largely reflect O'ahu's general population. 28.8 percent of the 'Ewa DP population speaks a language other than English, and 13.8 percent of the population speaks English less than "Very well." The most common languages spoken, other than English, are Asian and Pacific

Island languages, which are spoken by 26.3 percent of the population. All other languages combined make up only 2.8 percent of languages spoken.

Census Tract 85, representing Barbers Point, has a lower proportion of persons speaking languages other than English. This can be attributed to the presence of military families and residents at the site of the former Barbers Point Naval Air Station, at which the Navy still maintains housing and recreational facilities.

In Census Tract 86.05, which represents ʻEwa Villages, there is a slightly higher proportion of people who speak languages other than English. 39 percent of the population in this area speaks an Asian or Pacific Island language, and over half of this population speaks English less than "Very well." The proportionally high number of Tagalog speakers (20.4 percent) reflects the larger percentage of Pacific Islanders in the area.

Section II – Fort Weaver Road to Aloha Stadium

When considered as a whole, the linguistic characteristics of the population in Section II of the study corridor are generally similar to that of Oʻahu overall. However, several distinct communities exist within this section, each with different cultural and linguistic characteristics. Although Pearl City and ʻAiea are very close to islandwide linguistic percentages, Waipahu has a high proportion of non-English speakers. The ethnically diverse area of Waipahu has its root as a plantation community and has larger percentages of Asians (predominantly of Filipino decent) and NHOPI. In Waipahu (Census Tracts 87.02, 88, and 89.14), over half the population speaks an Asian or Pacific Island language, and over half of this population speaks English less than "Very well."

Section III – Aloha Stadium to Keʻehi Interchange

Overall, the population residing in Section III of the study corridor has linguistic characteristics similar to that of Oʻahu as a whole, with the exception of having a higher proportion of Spanish speaking people. Section III can also be separated into several culturally distinct communities. The Moanalua and Fort Shafter areas (Census Tracts 66 and 67.01) show higher percentages of persons speaking only English, which can be attributed to the presence of military installations and associated housing in the area. Although the Salt Lake area is also in close proximity to military installations, there is a clear distinction between the different areas showing high proportions of non-English speakers. The Salt Lake communities of Āliamanu and Māpunapuna (Census Tracts 68.02 and 68.03) have high percentages of Asian and Pacific Island language speakers, likely due to these areas' popularity as housing for the diverse urban workforce.

The Airport (Census Tract 72), Pearl Harbor (Census Tracts 71 and 74), and Fort Shafter (Census Tract 66) represent several of the rare pockets of communities on the Island that speak Spanish and other Indo-European languages. In these areas, Indo-European language speakers outnumber those speaking Asian and Pacific Island languages. This relatively high proportion of Indo-European language speakers can be attributed to the presence of military and industrial employment in these areas, which have attracted a higher proportion of Whites (see the preceding *Ethnicity* section).

Section IV – Ke'ehi Interchange to Iwilei

The Kalihi-Pālama area has the highest proportion of non-English speakers in the study corridor, with 59.6 percent of the population speaking a language other than English, and 38.5 percent of this population speaking English less than "Very well." This region is considered a melting pot of immigrants and cultures from Polynesia, Micronesia, and South-east Asia (see the preceding *Ethnicity* section), as shown by the high proportion of persons speaking Asian and Pacific Island languages (57.6 percent), particularly Tagalog and other Pacific Island languages. These proportions are consistent throughout Section IV of the study corridor, with the exception of the Iwilei area (Census Tract 57), which has linguistic characteristics more similar to that of general O'ahu.

Section V – Iwilei to UH Mānoa

The population residing in Section V of the study corridor has linguistic characteristics similar to that of O'ahu and the state as a whole. The dominance of Chinese immigrants and culture in Chinatown and Nu'uanu (Census Tracts 52 and 51, respectively) can be seen by the very high proportion of persons speaking Asian and Pacific Island languages (above 60 percent) and persons speaking English less than "Very well" (above 45 percent). Waikīkī shows a high percentage of persons speaking Spanish and other Indo-European languages, which can be attributed to the relatively high proportion of Whites in the area (see the previous *Ethnicity* section).

Income and Employment Characteristics

Income

Table 4-4 shows the median household incomes and employment characteristics for O'ahu as a whole and 'Ewa, Central O'ahu, and PUC DP Areas. Incomes in the DP Areas were generally higher than the median household income for O'ahu, with the exception of the PUC DP area. In comparison to O'ahu's overall area, the 'Ewa and Central O'ahu have a smaller percentage of residents living below the poverty line. However, a slightly larger percentage gap between households exists, with incomes of lower than $15,000 and households with incomes of higher than $75,000 (with the exception of the PUC DP Area).

According to Table 4-4, the PUC DP area has a greater percentage of households that earn an income lower than $15,000 compared to the 'Ewa and Central DP areas and O'ahu overall. Households that fall in the category range of earning lower than $15,000 are considered to be low-income. *Low-income* means a household income at or below the U.S. Department of Health and Human Services poverty guidelines. For Hawai'i in 2005, this was an income at or below $22,260 per year for a family of four. Because the PUC DP area consist of a high percentage of designated low-income households and a low percentage of households that earn over $75,000, the high percentage of persons below the poverty level is accounted for in the PUC DP Area when compared to the other two DP Areas and O'ahu overall.

Table 4-4. Year 2000 Income and Employment Characteristics

		Development Plan Area		
	O'ahu	PUC	'Ewa	Central O'ahu
Number of Households	286,731	153,137	19,082	42,740
Average Household Size	2.95	2.63	3.61	3.32
Income by Household				
Median Income	$52,280	$44,947	$60,811	$57,144
Lower Than $15,000	11%	14%	5%	8%
Higher Than $75,000	32%	27%	34%	34%
Persons Below Poverty Level	10%	12%	6%	8%
Selected Income Source by Household				
Social Security Income	28%	30%	17%	21%
Retirement Income	22%	22%	17%	20%
Public Assistance Income	7%	6%	7%	7%
Employment Status				
Population 16 years and over	691,015	346,403	49,476	110,534
Civilian	59%	57%	65%	60%
Employed	55%	54%	62%	56%
Unemployed	4%	4%	4%	4%

Note: In 1999 dollars

Source: Department of Planning and Permitting, City and County of Honolulu. Community Profiles by Development Plan Area: 2000, May 2003. Accessed *http://honoluludpp.org/planning/ResearchStats.asp* on July 3, 2006.

The median income for the PUC DP Area is substantially lower than the islandwide median and the 'Ewa and Central O'ahu DP Areas. The PUC DP Area has a smaller average household size than the O'ahu average, which partially explains the lower median household incomes. The PUC DP Area also consists of high poverty neighborhood areas, such as Downtown, Kalihi-Pālama, and Kalihi Valley. These areas contain low-income housing and/or public housing units, have a disproportionate number of elderly residents, and are areas where new immigrants have settled.

As also shown in Table 4-4, the PUC DP area has a slightly higher percentage of households that receive social security and retirement incomes than for all of O'ahu. Neighborhood areas such as Liliha-Kapālama, Kalihi/Pālama, and Kalihi Valley are located in the PUC DP Area and contain a large amount of older housing and long-time residents.

Income characteristics at the local level also vary within project area neighborhoods, as shown in Table 4-5 and discussed in the rest of this section.

Table 4-5. Selected Year 2000 Neighborhood Income Characteristics

Neighborhood	Median Household Income	Individuals Below Poverty Level	Families Below Poverty Level	Unemployed
Section I. Kapolei to Fort Weaver Road				
ʻEwa	$58,226	5.9%	4.5%	3.6%
Makakilo/Kapolei/Honokai Hale	$64,560	4.7%	4.3%	3.4%
Section II. Fort Weaver Road to Aloha Stadium				
Waipahu	$60,269	9.0%	6.4%	4.1%
Pearl City	$66,501	5.8%	3.9%	3.0%
Aiea	$55,243	7.9%	5.9%	3.1%
Section III. Aloha Stadium to Middle Street				
Āliamanu/Salt Lake/Foster Village	$51,747	6.5%	4.8%	3.4%
Airport	$40,999	3.3%	2.6%	2.4%
Moanalua	$57,805	4.9%	3.4%	1.9%
Section IV. Middle Street to Iwilei				
Kalihi-Pālama	$31,627	20.9%	19.2%	5.4%
Section V. Iwilei to UH Mānoa				
Ala/Moana/Kakakko	$30,624	22.4%	16.1%	3.0%
Downtown	$29,946	26.1%	16.1%	9.9%
Makiki/Tantalus/Lower Punchbowl	$37,818	14.4%	10.3%	3.4%
McCully/Moilili	$35,728	15.1%	10.4%	3.8%
Waikīkī	$32,547	16.8%	7.8%	3.1%
Mānoa	$62,314	7.8%	4.1%	3.0%

Source: Department of Planning and Permitting, City and County of Honolulu, 2006.
Selected Economic Characteristics: 2000 by Neighborhood Area

- In Section I, median household income averages approximately $61,400. The number of individuals below the poverty level is slightly more than the number of families below the poverty level. Unemployment in these neighborhoods averages approximately 3.5 percent.
- In Section II neighborhoods, median household income is approximately $60,700. The number of individuals below the poverty level is approximately 5.3 percent. Unemployment averages approximately 3.4 percent.
- In Section III neighborhoods, the median household income averages approximately $50,200. The number of individuals below the poverty level averages approximately 6.5 percent, and the approximate average for families is 4.8 percent. The average unemployment rate is approximately 2.6 percent.
- In Section IV, the Kahli-Pālama neighborhood has an average median household income of approximately $31,600. Approximately 21 percent of individuals and 19 percent of families are below the poverty level. The average unemployment rate is approximately 5.4 percent.

- In Section V neighborhoods, the average median household income is approximately $38,200 annually. The number of individuals below the poverty level averages approximately 17 percent and the number of families below the poverty level averages approximately 11 percent. The average unemployment rate is approximately 4.3 percent.

Generally, this data indicates that income levels tend to be lowest in neighborhoods within the Section IV and Section V areas of the proposed project route. Similarly, there are correspondingly high poverty levels for families and individuals in the Section IV and Section V neighborhoods. Except for the Airport and Āliamanu/Salt Lake/Foster Village neighborhoods in Section III, all other neighborhoods have average median household incomes greater than the $52,280 median household income in O'ahu as a whole.

Poverty levels for individuals within the project area neighborhoods are generally less than the overall O'ahu rate of 10 percent. The Waipahu neighborhood in Section II, the Kalihi-Pālama neighborhood in Section IV, and the Downtown neighborhood in Section V are the only project-area neighborhoods with unemployment rates above the 4 percent unemployment rate for O'ahu as a whole.

Employment

Accompanying the projected growth in population is a projected increase in employment within the study corridor. As shown in Table 4-6, according to the forecast developed by the DPP, the number of jobs on O'ahu is projected to increase to approximately 605,424 in 2030, which will require a 27 percent growth between the years 2000 and 2030. Approximately 44 percent of these new jobs will be located in the PUC and about 34 percent will be located in 'Ewa, consistent with its status of "Second City" (City and County DPP).

Table 4-6. Projected Employment Summary

Development Plan Area	2000	2030	Change	Percent Change
PUC	359,392	415,809	56,417	16%
'Ewa	15,255	59,879	44,624	293%
Central O'ahu	43,770	66,949	23,179	53%
O'ahu	**476,207**	**605,391**	**129,184**	**27%**

Note: Excludes construction employment

Source: Department of Planning and Permitting, City and County of Honolulu, accessed *http://honoluludpp.org/planning/ResearchStats.asp* on March 15, 2006.

As shown in Table 4-6, the City projects that job growth for the 'Ewa DP area will increase from 15,255 in 2000 to 59,879 in 2030 – a 293-percent increase. This job growth is expected to result from O'ahu residents and visitors being drawn to the attraction of the 'Ewa region by a new university campus, the Ko 'Olina Resort, Campbell Industrial Park, ocean and waterfront activities at 'Ewa Marina, a major super regional park, and a commercial and retail industry in the City of Kapolei, which includes

private and government offices (‘Ewa Development Plan, 2000). Kalaeloa (former Barbers Point Naval Air Station) will be a major employment center in the near future.

In comparison to the projection for ‘Ewa job growth, PUC jobs are projected to increase by a mere 15 percent in 2030. Although the PUC’s share of O‘ahu employment will decline to about 70 percent by 2025, the PUC will remain by far the state’s commercial and financial center, as well as O‘ahu’s primary employment center (PUC Development Plan, 2004).

Also shown in Table 4-6, job growth in Central O‘ahu is expected to rise from 43,770 in 2000 to 67,057 in 2030 – a 53-percent increase. According to the Central O‘ahu Sustainable Communities Plan (2002), the bulk of private non-construction job growth is projected to be in services, retail, or transportation/communications/utilities (70 percent) with another 20 percent in industrial occupations.

Major Employment Centers

Major employment centers on O‘ahu include:

- Pearl Harbor;
- Pearlridge Center;
- Honolulu International Airport;
- Industrial districts in Pearl City, Hālawa Valley, the Airport area, Māpunapuna, Kalihi, Iwilei and Kaka‘ako;
- Downtown Honolulu and the Capital District;
- Ala Moana Center and the surrounding area;
- Waikīkī; and
- University of Hawai‘i at Mānoa

The trade, service and government (military, federal, state and county) sectors are major employment categories, representing 76 percent of all jobs on the island. This distribution of employment among sectors is not anticipated to change in the near future.

Despite the growing popularity of telecommuting and other new workplace trends, future employment is forecast to be substantial and centralized in the PUC and ‘Ewa (Kapolei).

Housing and Household Characteristics

Regionally, the greatest number of housing units in the area occurs within the PUC, where over 170,000 units are located. Most units in the PUC are renter-occupied and over ten years old. In 2000, the median value of owner-occupied units was over $350,000. Fewer housing units exist in the ‘Ewa and Central O‘ahu areas. Most housing units in this area are owner-occupied and the median value is between $230,000 and $270,000. More new structures built within the last ten years are located in the ‘Ewa and Central O‘ahu areas than are found in the PUC. Regional housing characteristics are identified in Table 4-7.

Table 4-7. Selected Year 2000 Housing Characteristics by Development Area

Category	O'ahu	Development Plan Area		
		PUC	'Ewa	Cental O'ahu
Total Housing Units	315,988	171,773	20,804	45,871
Average Household Size	2.95	2.63	3.61	3.32
Owner-Occupied Units	49.5%	41%	64%	56%
Renter-Occupied Units	41.2%	48%	27%	37%
Year Structure Built:				
1 to 10 years old	14.6%	8.7%	49.7%	24.3%
11 years or more	85.3%	91.3%	50.2%	73.7%
Lacking complete plumbing	0.6%	0.7%	0.3%	0.3%
Lacking complete kitchen	1.2%	1.4%	0.4%	0.5%
No telephone service	1.7%	2.0%	0.7%	1.4%
Median Value (owner-occupied units)	$309,021	$351,823	$230,884	$267,441

Source: Department of Planning and Permitting, City and County of Honolulu, 2006.
Selected Housing Characteristics: 2000 by Development Plan Area

As shown in Table 4-7, the average median value for housing in the PUC was greater than the O'ahu median overall, and median values in the 'Ewa and Central O'ahu areas were below the O'ahu median. Fewer housing units were available in the 'Ewa and Central O'ahu areas than in the PUC. This may help account for the average household size in the 'Ewa and Central O'ahu areas, which is above that of O'ahu as a whole.

At the local level within the proposed project section areas, housing conditions vary over the length of the corridor (see Table 4-8). Data for individual neighborhood areas along the corridor indicate that a variety of housing conditions are present in the area. Several neighborhoods are found within most of the project sections.

In Section I there are approximately 7,800 to 13,000 housing units in local neighborhood areas, with an average value of $234,000. The majority of units in these neighborhoods are owner-occupied (64 percent) and nearly evenly divided between newer (ten years or newer) and older units (11 years or older). Most units have basic plumbing and kitchen facilities and have phone service, but within this area 0.6 percent lack phone service.

In Section II, there are between 14,000 and 18,000 housing units in local neighborhoods, with over 60 percent owner-occupied and with a median value of approximately $294,000. Over 85 percent of units in this area are older than 11 years. Although most units have basic plumbing, kitchen and phone facilities, approximately 1.2 percent lack phone service.

Table 4-8. Selected Year 2000 Housing Characteristics by Neighborhood Area

Neighborhood	Total Housing Units	Owner-Occupied Units	Renter-Occupied Units	Year Structure Built		Lacking complete plumbing	Lacking complete kitchen	No telephone service	Median Value
				10 years or less	11 years or more				
Section I. Kapolei to Fort Weaver Road									
ʻEwa	12,970	62.2%	28.6%	49.3%	50.7%	0.4%	0.6%	0.9%	$223,665
Makakilo/Kapolei/ Honokai Hale	7,884	66.2%	25.1%	50.3%	49.7%	0.1%	0.1%	0.3%	$244,199
Section II. Fort Weaver Road to Aloha Stadium									
Waipahu	18,373	60.8%	33.9%	29.7%	70.3%	0.4%	0.4%	2.0%	$260,282
Pearl City	14,406	69.1%	27.9%	7.9%	92.2%	0.2%	0.3%	0.5%	$290,341
Aiea	11,035	56.0%	39.8%	4.9%	95.0%	0.4%	0.5%	1.1%	$330,728
Section III. Aloha Stadium to Middle Street									
Āliamanu/Salt Lake/ Foster Village	12,928	44.0%	46.8%	8.3%	91.6%	0.3%	0.5%	1.0%	$355,403
Airport	5,568	1.5%	87.3%	26.2%	73.9%	0.6%	0.55%	0.3%	$260,417
Moanalua	3,579	46.6%	46.3%	4.4%	95.6%	0%	0.8%	0.4%	$372,317
Section IV. Middle Street to Iwilei									
Kalihi-Pālama	11,108	26.5%	65.8%	6.9%	93.1%	2.3%	4.3%	6.3%	$297,188
Section V. Iwilei to UH Mānoa									
Ala/Moana/Kakakko	9,289	26.2%	56.4%	29.2%	70.8%	0.8%	0.7%	2.0%	$342,308
Downtown	7,026	21.2%	71.7%	22.8%	77.3%	1.6%	3.1%	4.0%	$279,167
Makiki/Tantalus/Lower Punchbowl	16,122	35.5%	56.1%	3.0%	18.1%	0.7%	1.1%	2.8%	$450,943
McCully/Moilili	14,098	25.5%	64.4%	3.7%	96.3%	0.7%	1.9%	2.6%	$332,759
Waikīkī	18,371	20.8%	41.3%	1.8%	98.2%	1.0%	3.7%	3.5%	$203,804
Mānoa	7,553	56.9%	38.1%	9.2%	90.7%	0.2%	1.4%	0.4%	$489,580

Source: City and County of Honolulu DPP, 2006. Selected Housing Characteristics: 2000 by Neighborhood Area

In Section III, there are between 3,500 and 13,000 housing units in local neighborhoods, but only approximately 31 percent are owner-occupied and over approximately 60 percent are renter-occupied. The median value of owner-occupied neighborhood units is approximately $330,000 and over 86 percent of all units are greater than 11 years of age. Nearly 1 percent of the total units lack complete kitchen facilities and phone service.

In Section IV, there are slightly over 11,000 housing units in the Kahli-Pālama neighborhood, the only neighborhood represented there. Within this neighborhood, approximately 26 percent of units are owner-occupied and 66 percent are renter-occupied. The median value of owner-occupied units is approximately $300,000. Approximately 93 percent of the housing units are over 11 years of age. Among project area sections, this area has the most units that lack complete facilities: over 2 percent lack complete plumbing facilities, over 4 percent lack complete kitchen facilities, and over 6 percent lack phone service.

In Section V, there are between 7,000 and 18,000 housing units in local neighborhoods and 40 percent of these units are owner-occupied. The median value of neighborhood units is approximately $350,000 and over 75 percent of these units are over 11 years old. Nearly 2 percent of neighborhood units lack complete kitchen facilities and over 2 percent of these units do not have phone service.

Transit Dependency

Public Transportation

Public transportation plays an important role in O'ahu's transportation system. These services provide an alternative to automobile travel and, by extension, benefit the island by helping reduce roadway congestion, air and noise pollution, and energy consumption. Public transit also offers mobility options to the elderly, the physically and mobility challenged, and persons who do not have access to an automobile.

Public Transit

The City and County of Honolulu operates an islandwide public bus transit system called *TheBus*. This system is a fixed-route, regularly scheduled public transit service operated by O'ahu Transit Services (OTS) and is the backbone of basic transit services for the island of O'ahu. The City also provides transit services for semi-ambulatory and non-ambulatory person with disabilities called *TheHandi-Van*. HDOT also currently operates a vanpool program (Vanpool Hawai'i) through an outside contractor, VPSI, Inc.

TheBus system provides 93 numbered buses serving urban, suburban, and rural areas throughout O'ahu. As of 2004, TheBus had a fleet of 525 buses and approximately 4,200 bus stops on the island. The system carries approximately 68 million passengers traveling approximately 21.5 million miles per year. Weekday transit service for most bus routes is between the hours of 5:00 a.m. and 10:00 p.m. Four periods comprise the daily service of TheBus operations: mornings (5:00 a.m. to 9:00 a.m.), midday (9:00 a.m. to 2:00 p.m.), afternoons (2:00 p.m. to 6:00 p.m.), and nights (6:00 p.m. to 10:00 p.m.).

Transit Travel Patterns

An on-board transit survey was conducted on all of TheBus routes in December 2005 and January 2006. Information obtained from the survey included the origins and destinations of current transit bus users for a variety of trip purposes, for both the 178,400 total daily trips and the 57,000 peak-period work trips. These survey data indicate that a substantial majority of trips made by transit on the island occur within the study corridor.

Compared to total travel, the current number of transit trips within the study corridor as a percentage of total islandwide transit trips is even more pronounced. Based on the survey data, 83 percent of both islandwide daily and peak-period work-related trips originate within the study corridor. The study corridor attracts 90 percent of total islandwide daily trips and 94 percent of peak-period work-related trips.

Daily Transit Trips

Major destinations for weekday bus riders are Downtown (20 percent) and the Punchbowl-Sheridan-Date area (18 percent). Downtown contains the region's highest concentration of jobs. Punchbowl-Sheridan-Date and Ala Moana Center (the state's largest shopping complex) also contain a high number of jobs.

Overall, the largest share of TheBus riders' trips originates in Waikīkī (16.5 percent). The major destinations for these trips are Downtown (24 percent) and Punchbowl-Sheridan-Date (27 percent). In addition to Waikīkī, Punchbowl-Sheridan-Date (9 percent), Kāhala-Pālolo (8 percent), and Pauoa-Kalihi (9 percent) are the origins of a large number of trips.

Transit Dependency

Areas with high transit trip generation or attraction may not be the only indicator that there are transit-dependent populations within a community. Transit-dependent populations are persons who rely on public transit or paratransit services for most of their transportation. In this section, two measures for transit dependency are discussed. One measure is the area's proportion of households that have no vehicles available. This measure is a direct indicator of transit dependency, because households with no vehicles available are by default dependent on transit for both short- and long-distance trips. Another measure is the population of people age 65 and older. Although some people age 65 and older own and drive vehicles, the number of people who hold driver's licenses usually tapers as they get older and their transit and paratransit usage usually increases if transit is readily available (TRB, 2002). Therefore, this measure is not used as a direct indicator of an area's transit dependency, but is a factor in the consideration of locations that are more transit-dependent.

Households with No Vehicles Available

Several areas within the project corridor include households with no vehicles available. A transit-dependent community, as defined by this report, is a block group whose proportion of households with no vehicles available is one standard deviation above the mean for O'ahu. The mean of households with no vehicles available for all block groups

on O'ahu is approximately 12 percent. Islandwide, approximately 12.8 percent of households have no vehicle available. Areas that would be most well served by the provision of increased and more efficient transit are Sections IV and Section V, which have a high number of transit-dependent block groups.

Figure 4-4 shows the locations of communities that have transit-dependent areas. Sections IV and V have higher levels of transit dependency than all other sections. The Transportation Analysis Areas (TAAs) described in the *Transportation Impacts Report* that have high transit service are densely populated, with relatively high concentrations of transit-dependent households.

Populations Age 65 and Older

Figure 4-5 shows the percentage of populations age 65 and older by census tract. Many census tracts that have higher percentages (23 percent or above) are well within the project corridor. Such areas are census block groups representing Māpunapuna near Pu'uloa Road (55 percent of the population older than 65 years), Punahou by H-1 (45 percent), and the Tripler Medical Facility (37 percent).

Families on O'ahu tend to be multi-generational households (with 77 percent of individuals age 65 and older in family households on O'ahu compared to 63 percent in the U.S.). This characteristic could contribute to the shortage of vehicles available if there are more workers in a household than vehicles available. Oftentimes grandparents take care of the younger children while the parents work. The parents use the car to commute to work while the family who stays at home becomes transit dependent. This can be evident in communities like Kalihi.

Environmental Justice and Communities of Concern

OMPO Environmental Justice Areas

In 2000, the O'ahu Metropolitan Planning Organization (OMPO) undertook an effort to evaluate its Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) using the principles of Title VI and Environmental Justice (EJ). They produced the *Environmental Justice in the OMPO Planning Process: Defining Environmental Justice* in March 2004. This report documented OMPO's methodology for determining Environmental Justice areas and the results of the analysis. Using 2000 Census data, OMPO's analysis uses the federal definition of minority and the "poverty thresholds" defined by the Census Bureau. For the purposes of determining minority and/or low-income populations for the proposed project, the results of OMPO's analysis have been identified and block groups identified as EJ areas by OMPO are defined as communities of concern for the proposed project. OMPO EJ areas are shown in Figure 4-6.

Linguistically Isolated Households

Recognizing that most of O'ahu's population is comprised of the federally-defined minority populations, a supplemental identifier (linguistically isolated households) is used to further define communities of concern for the proposed project.

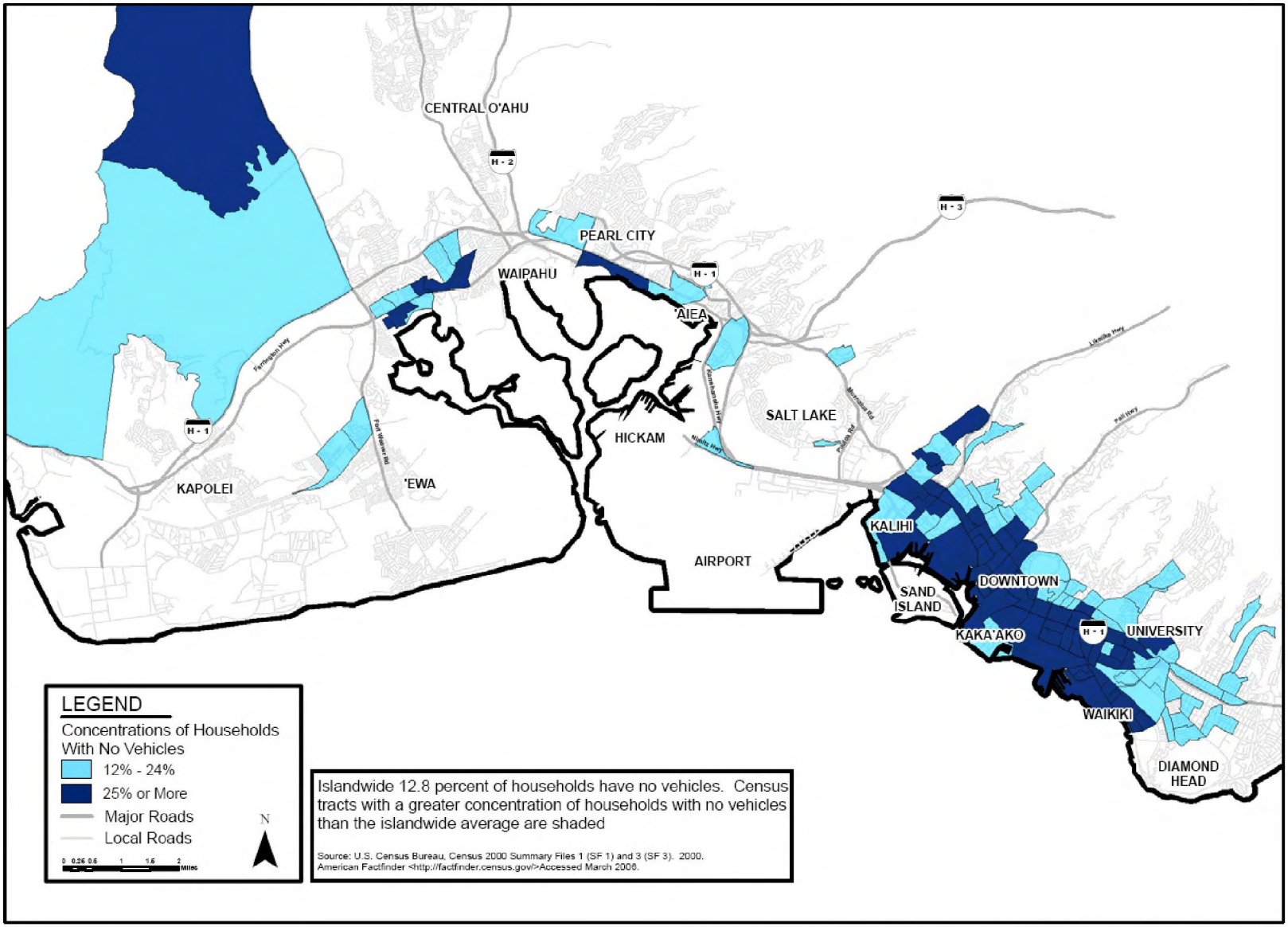

Figure 4-4. Concentration of Households with No Vehicles

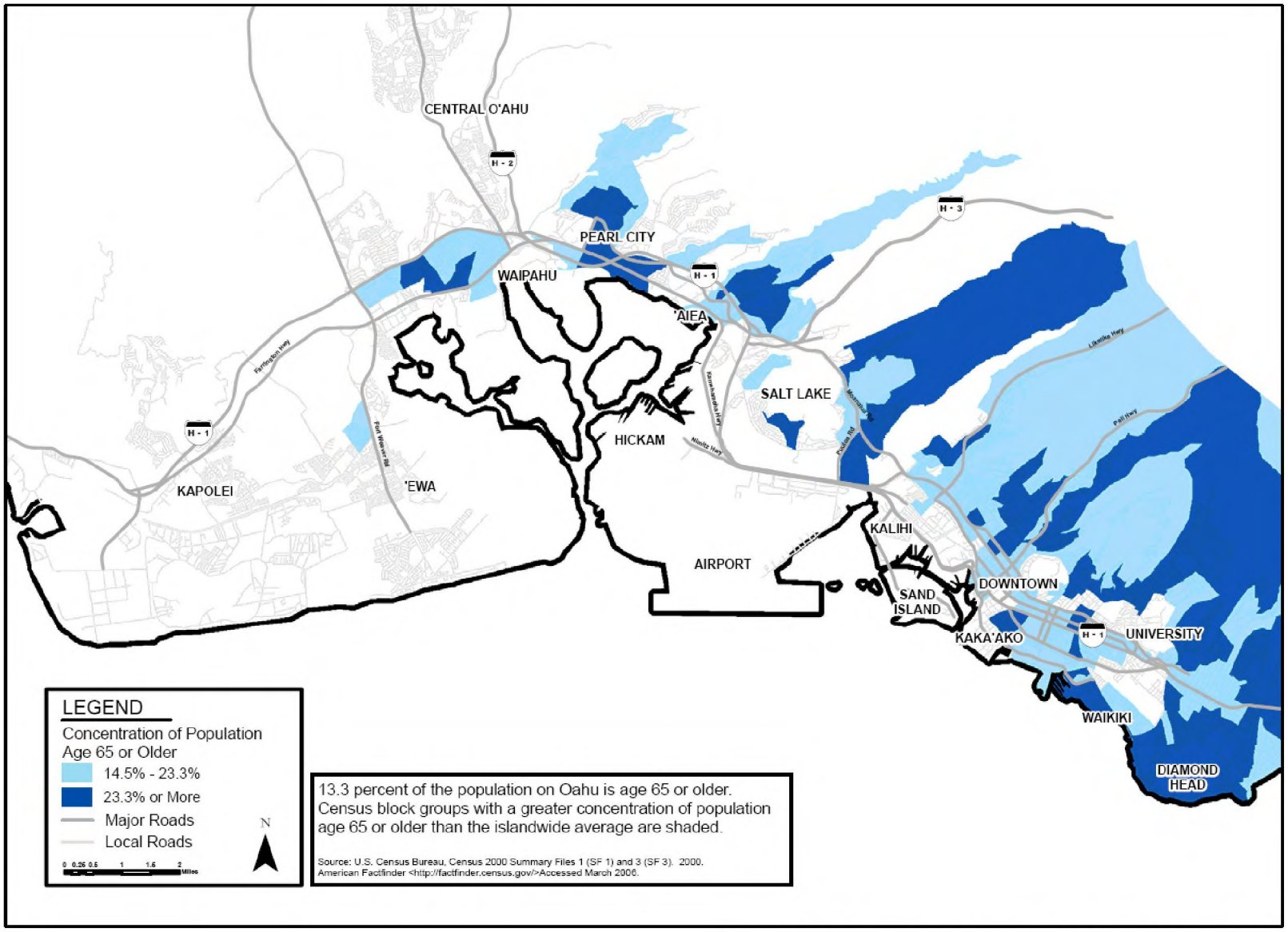

Figure 4-5. Concentration of Population Age 65 & Older

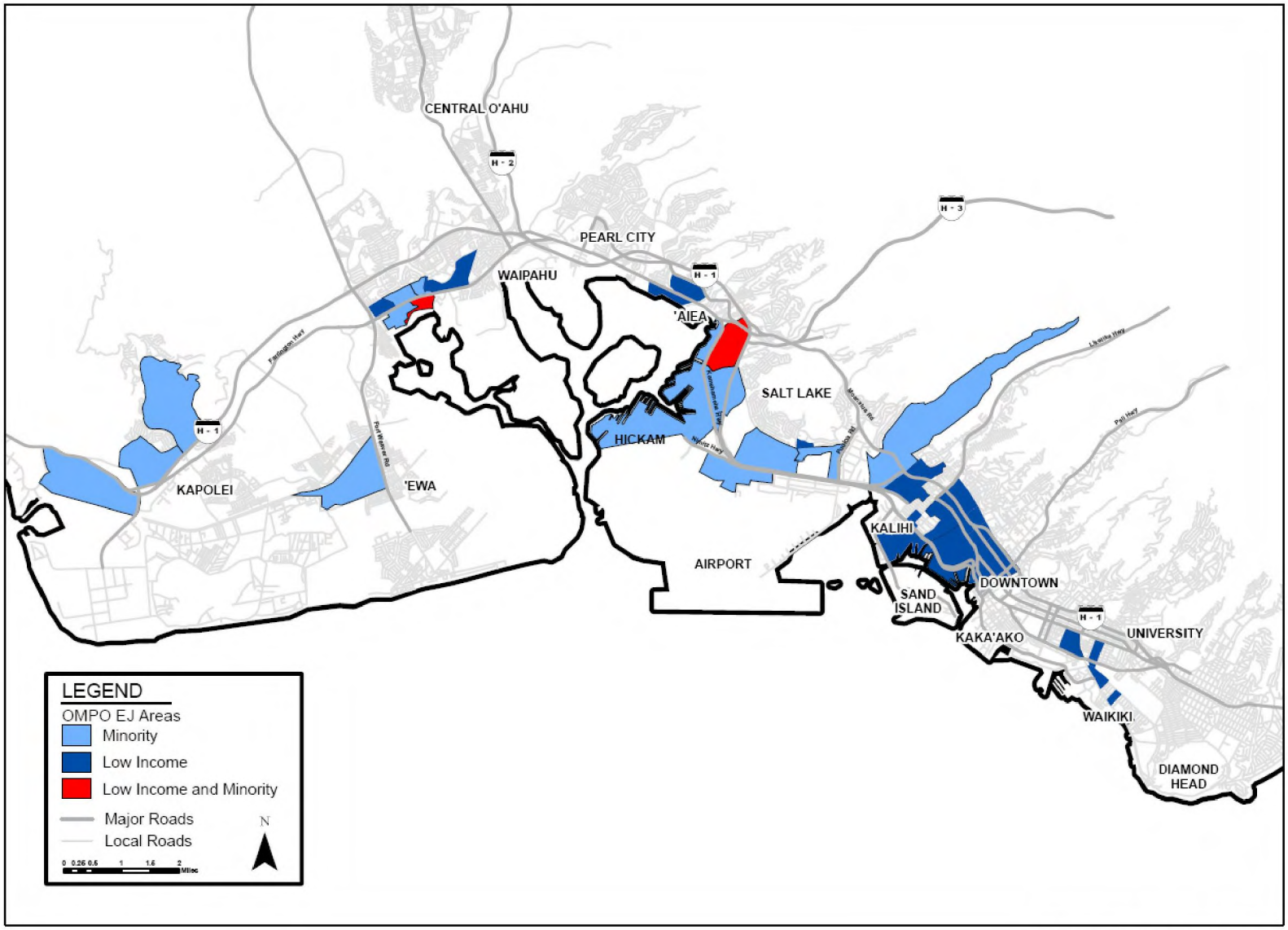

Figure 4-6. OMPO EJ Areas

Linguistically Isolated Households are defined as a households in which no person age 14 or over speaks English at least "very well". Based on knowledge of O'ahu's overall ethnic composition, linguistic isolation would give a more meaningfully definition of EJ areas by identifying disadvantaged communities that may require additional outreach efforts. The mean of linguistically isolated households for all block groups on O'ahu is approximately 7.3 percent. Islandwide, approximately 7.8 percent of households have language barriers. A threshold derived using a similar method to the OMPO EJ method resulted in linguistically isolated households greater than 21 percent being considered communities of concern. As shown in Figure 4-7, areas that have higher concentrations of households with possible language barriers are Waipahu and Pearl Ridge Center in Section II, the Ala Ilima High Rise area in Section III, portions of Kāhili-Pālama in Section IV, and areas around Kāheka Street, 'Ōlohana Street, Seaside Avenue, and Pāwa'a in Section V. Figure 4-8 shows areas that are considered to be possible communities of concerns for EJ. Sections II, III, and IV have more areas of concern than all other sections.

Public Services and Community Facilities

Land use and development patterns provide a community's physical setting. Public services and community facilities include schools, libraries, churches, cemeteries and burial sites, fire stations, police precincts, emergency medical services, public health clinics, and hospitals. Community centers, public parks and recreation centers, which also serve community needs, fall under the category of parks and recreation resources in this report.

A neighborhood area's ability to provide resources for its members often reflects the level of stability and solidarity found within the community. Neighborhoods that host a variety of resources allow community members to meet their needs within their own communities and open opportunities for neighbors to meet, creating a stronger sense of community and place. If people have to travel long distances to find needed resources, it is less likely that they will have an opportunity to interact with neighbors and develop relationships and a sense of membership within their own community. Community facilities that provide needed resources within a community include schools, libraries and cultural sites. Public service resources that help promote healthy and safe communities include police, fire, and medical resources. Schools, libraries and cultural sites, and other community facilities contribute to the social cohesiveness of a neighborhood by providing places where residents can gather for their educational and religious purposes. By providing places where social interaction can occur, these facilities strengthen the community's social health, which makes the functioning and occurrence of community facilities in neighborhoods important.

Table 4-9 indicates the number and type of public services and facilities found within each section of the study corridor. The proposed study corridor includes 270 community facilities. These schools, libraries, and cultural sites are spread throughout the project corridor, with the greatest concentration found in the more highly developed Section V of the project area.

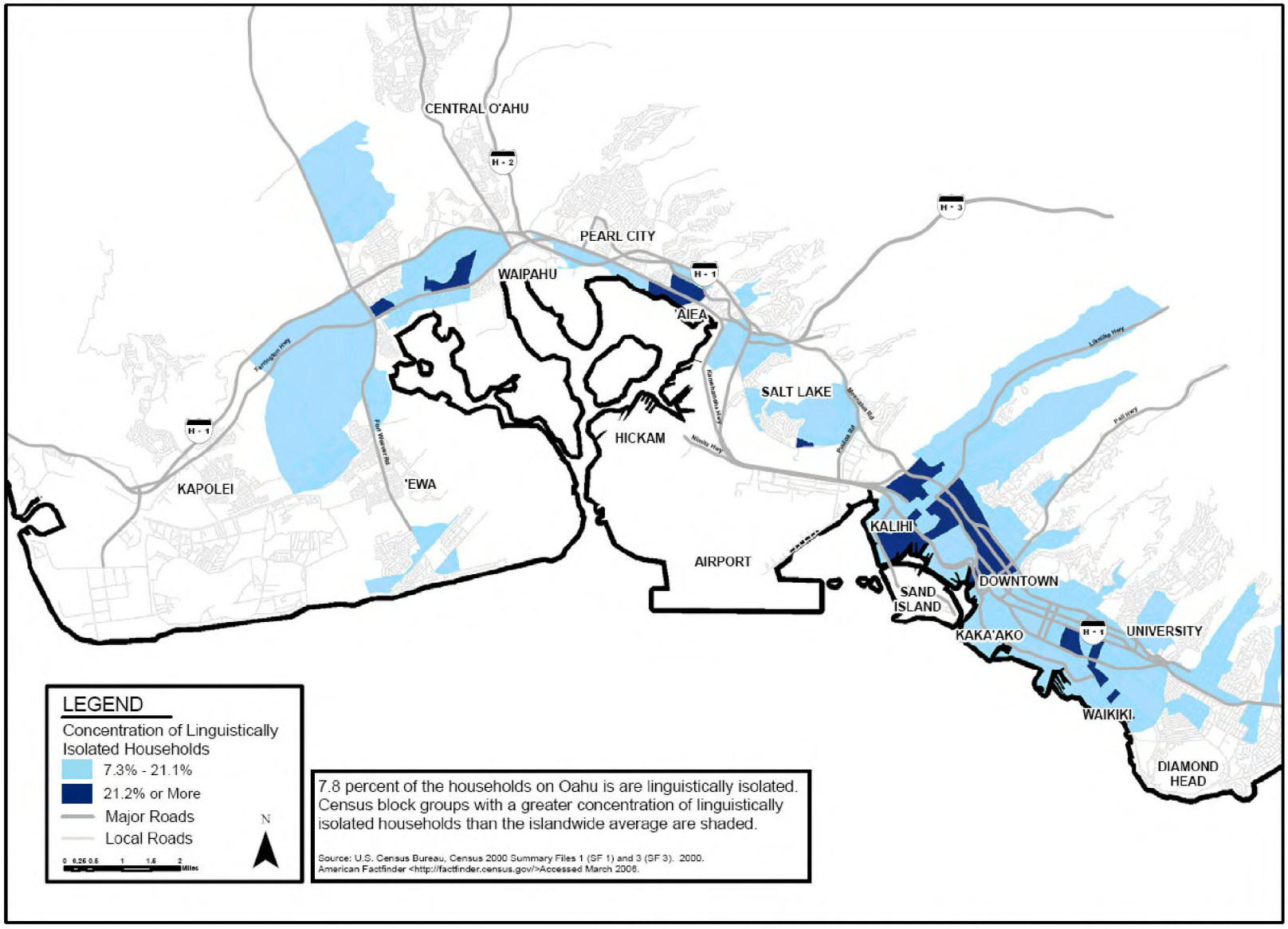

Figure 4-7. Concentrations of Linguistically Isolated Households

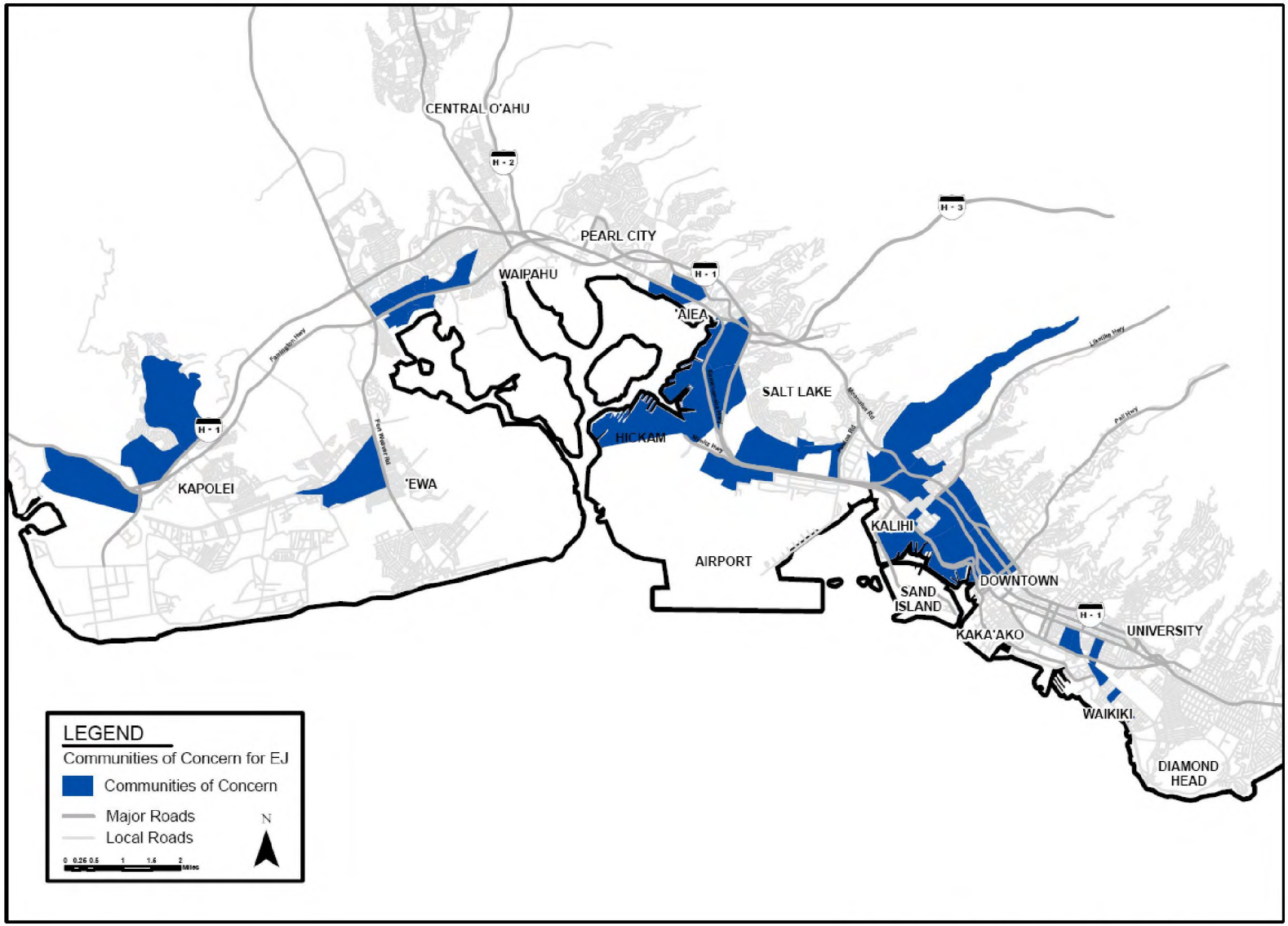

Figure 4-8. Communities of Concern for EJ

Table 4-9. Public Service and Community Facilities in the Study Corridor

Location	Schools	Cultural Sites	Libraries	Hospital / Medical Facilities	Fire Stations	Police Stations
Section I. Kapolei to Fort Weaver Road	7	21	1	5	1	1
Section II. Fort Weaver Road to Aloha Stadium	13	90	3	4	3	2
Section III. Aloha Stadium to Middle Street	16	0	1	9	2	1
Section IV. Middle Street to Iwilei	17	17	2	14	1	0
Section V. Iwilei to UH Mānoa	19	58	5	28	7	7
TOTAL	**72**	**186**	**12**	**60**	**14**	**11**

Figure 4-9 and Figure 4-10 show the location of public services and community facilities. All resources listed are located within a half-mile of the proposed project alignment. Appendix C contains additional tables with details on the location and types of resources found.

Schools found within the project area include both public and private, and range from the elementary to post-secondary level. Special needs schools, including schools for blind and deaf students, are also found within the proposed study corridor. Table C-2 in Appendix C lists the names of schools by project section.

Each project section has at least one library but overall, libraries are not particularly numerous in the proposed study corridor. Section II has three libraries and is the only section with more than one. Table C-4 in Appendix C lists the names and addresses of libraries in the project corridor.

There are 186 cultural sites (places of worship, cemeteries and burial sites) in the area. Nearly half are located in Section II, and the remainder are spread out among Sections I, IV and V. There are no cultural sites within Section III. Table C-5 in Appendix C includes a list of all cultural sites by project section, and the *Cultural Resources Technical Report* prepared for this project includes the names and locations of each cultural site in the proposed study corridor.

Parks and Recreational Facilities

Public and municipal golf courses are considered Section 4(f) resources. Under the jurisdiction of the City and County of Honolulu, public and municipal golf courses within the proposed study area consist of: the Ala Wai Golf Course, Coral Creek Golf Course, ‘Ewa Villages Golf Course, Ted Makalena Golf Course, and West Loch Golf Course. Additional golf courses within the study corridor include a combination of private, resort, and military golf courses. Table 4-10 and Figure 4-11 through 4-15 inventory the parks and golf courses in the study corridor.

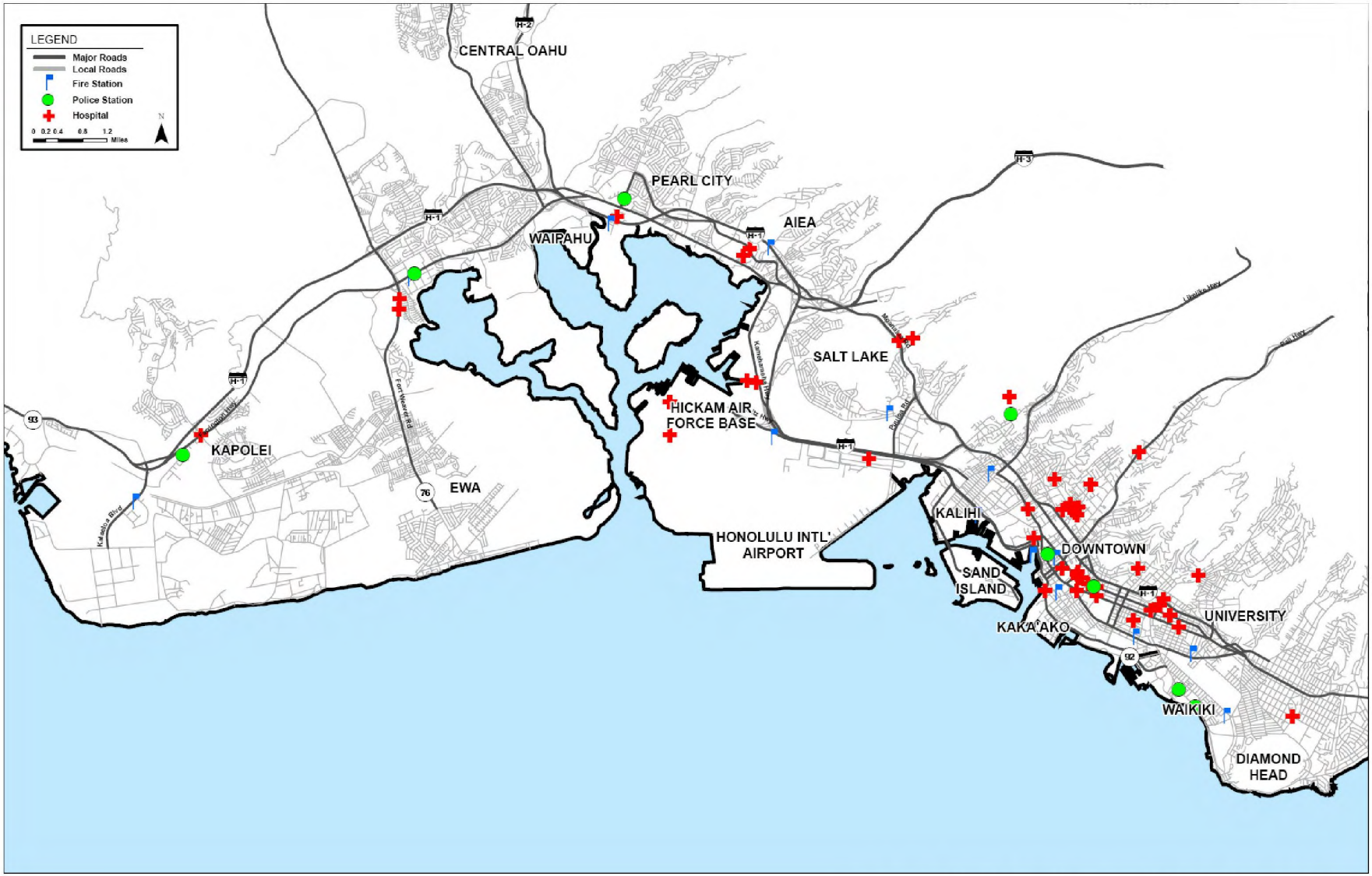

Figure 4-9. Police, Fire, and Hospital Facilities

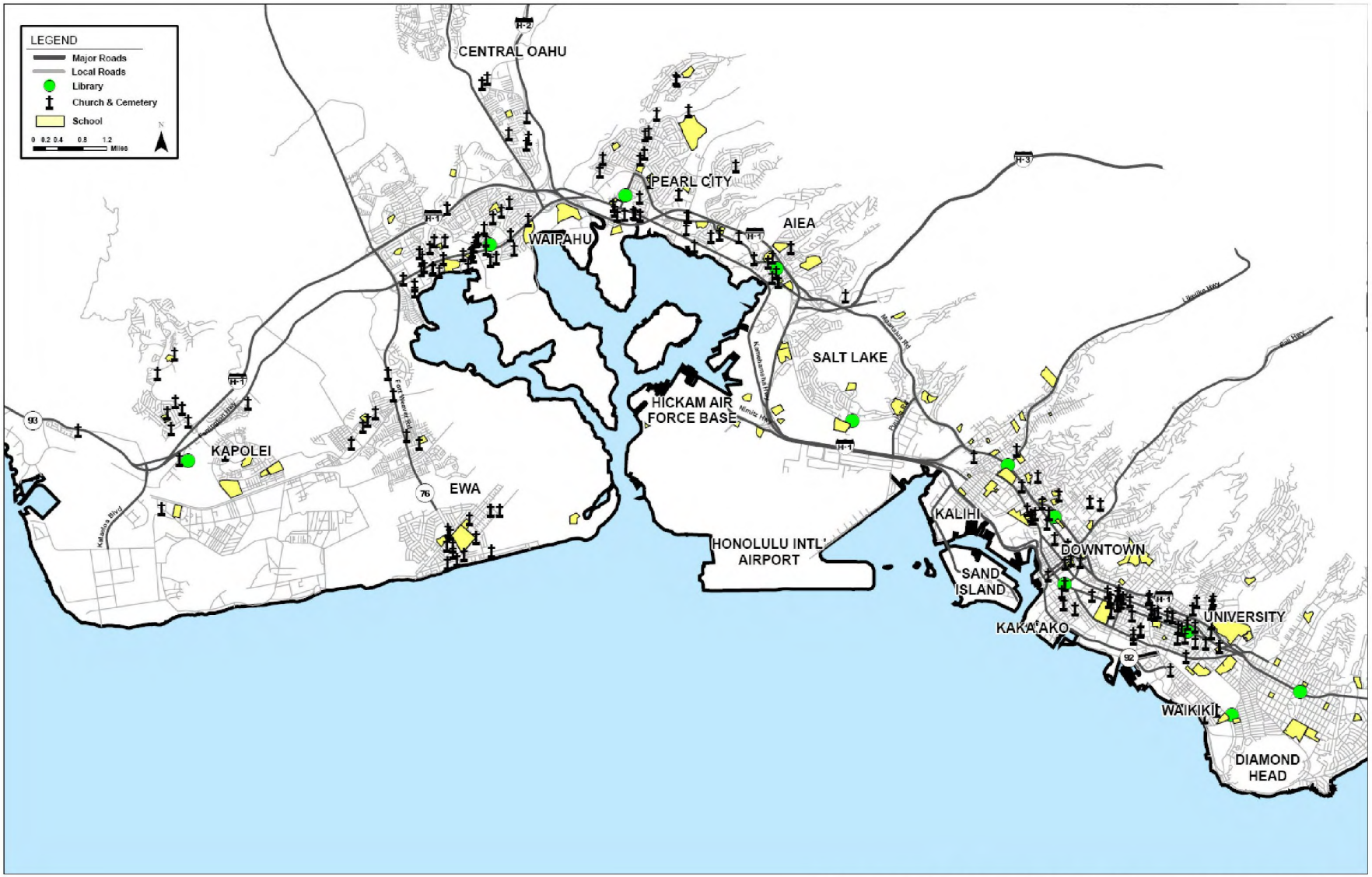

Figure 4-10. School, Libraries, and Cultural Sites

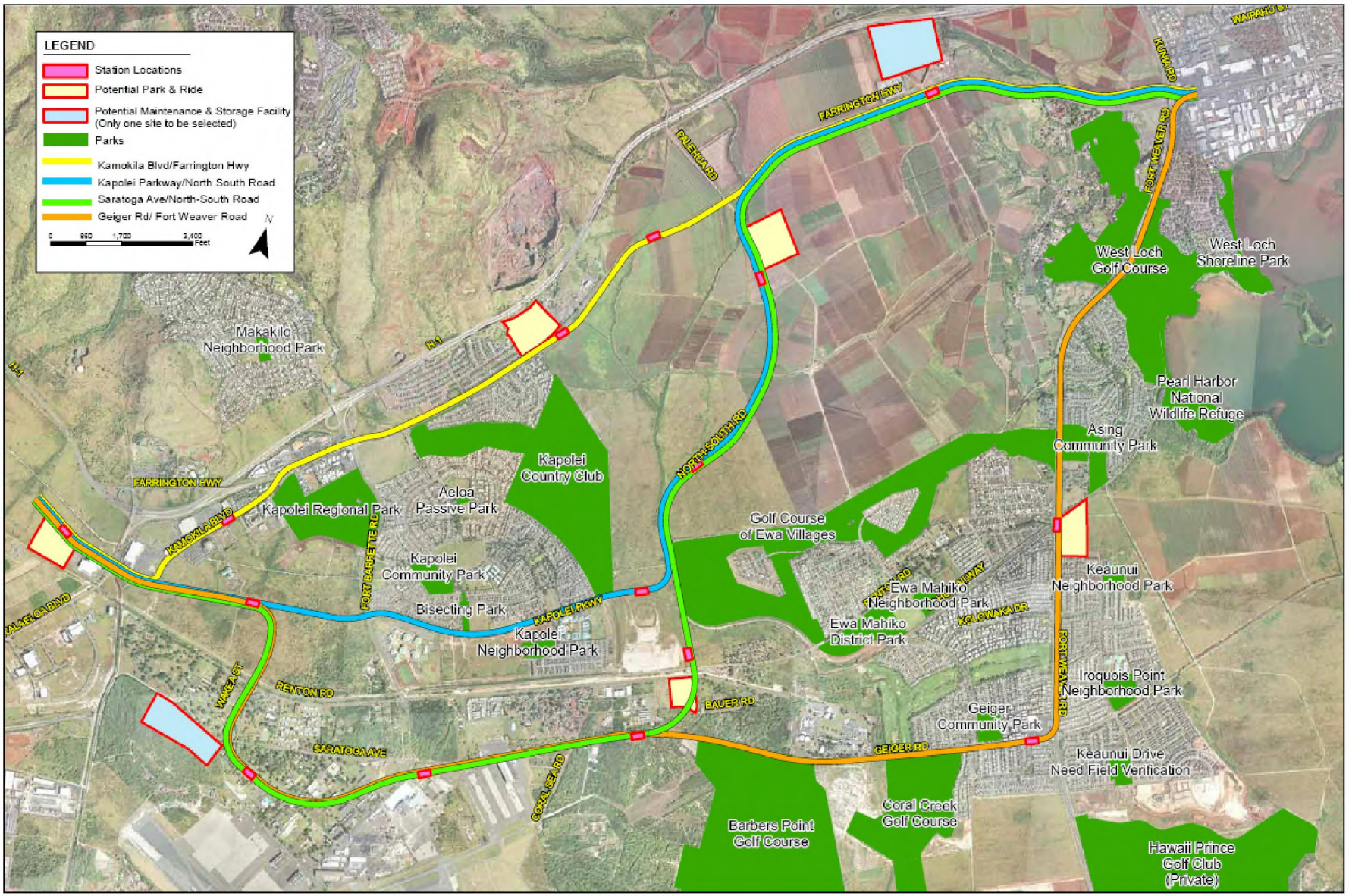

Figure 4-11. Parks and Golf Courses (I. Kapolei to Fort Weaver Road)

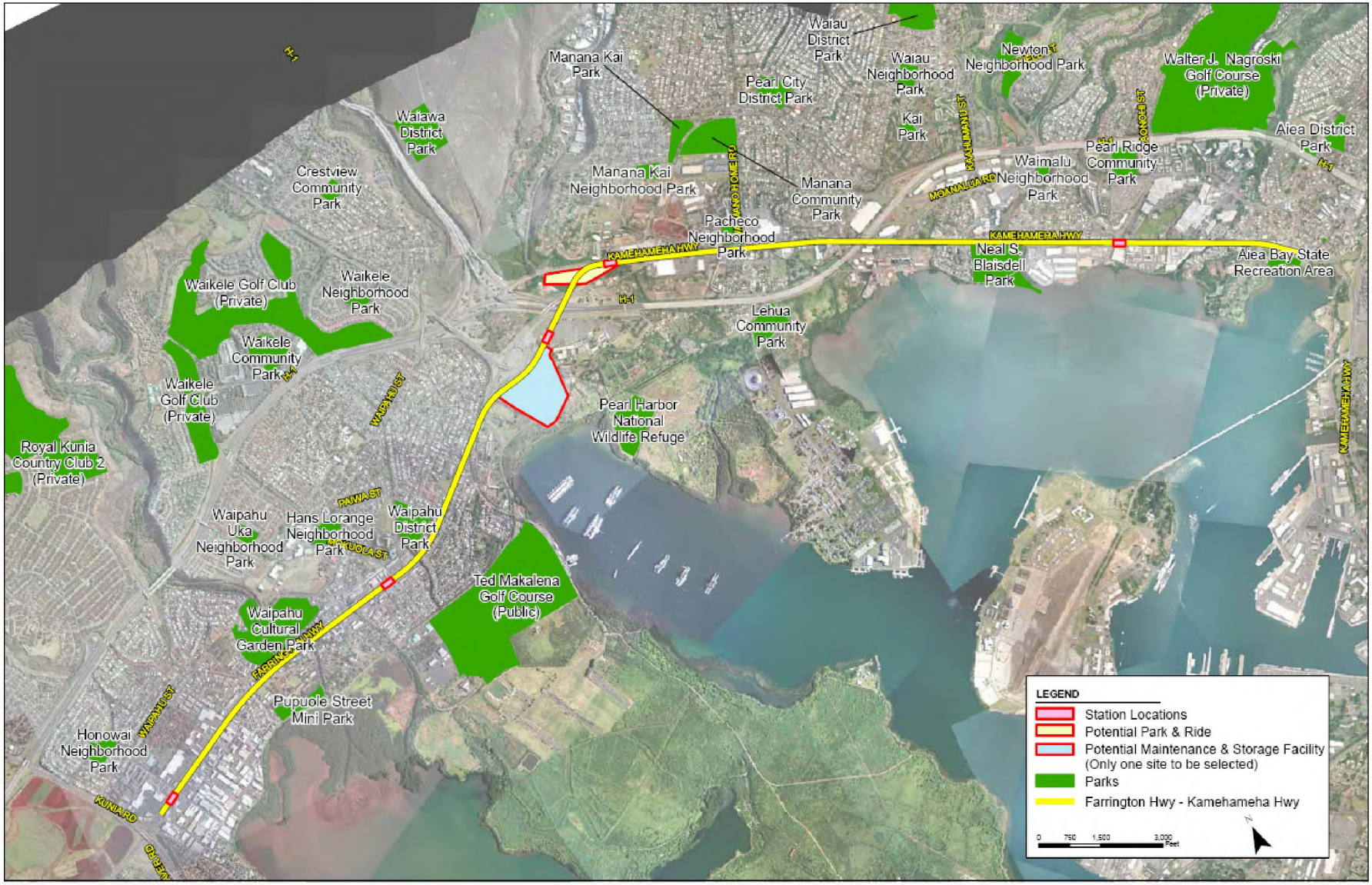

Figure 4-12. Parks and Golf Courses (II. Fort Weaver Road to Aloha Stadium)

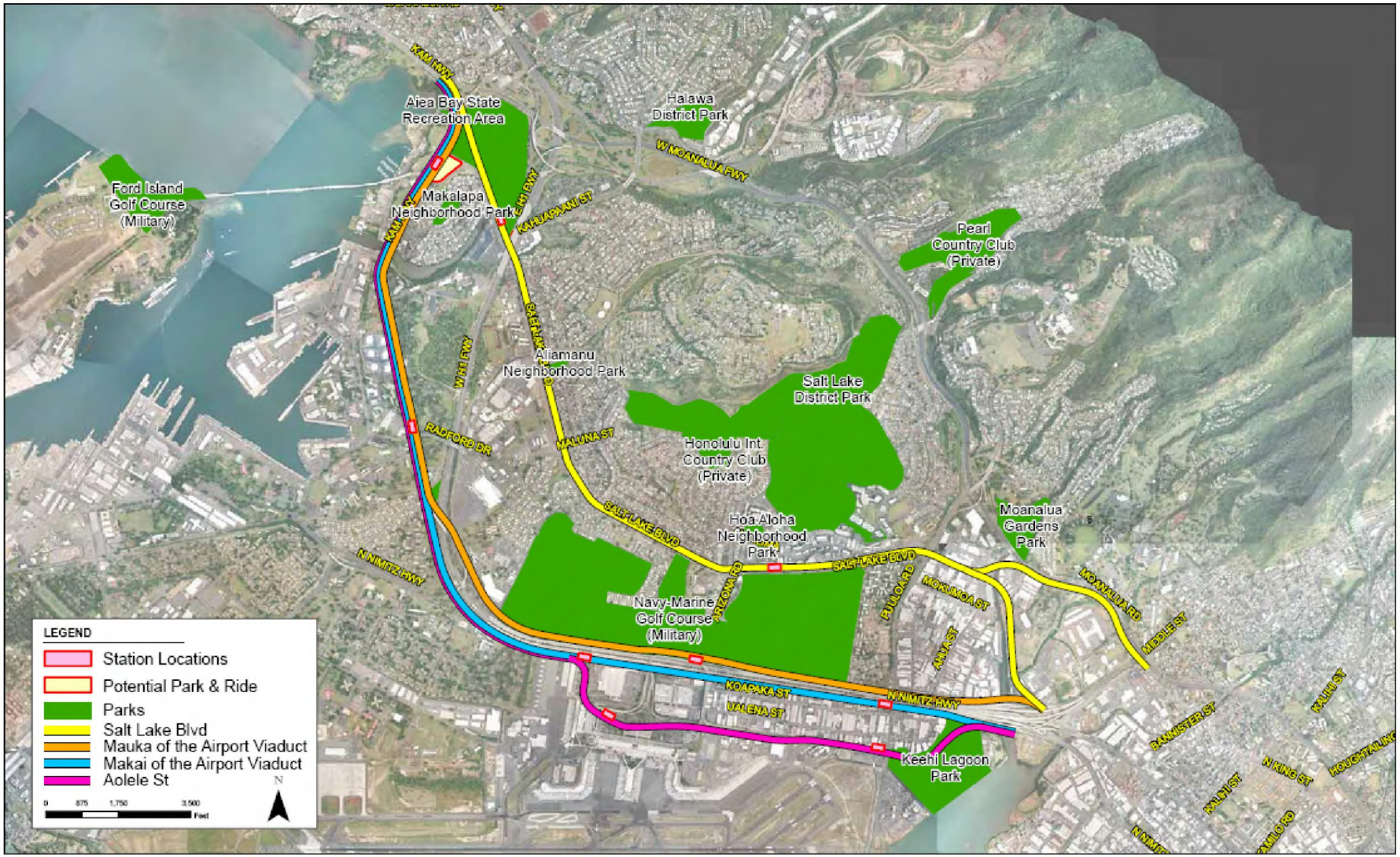

Figure 4-13. Parks and Golf Courses (III. Aloha Stadium to Middle Street)

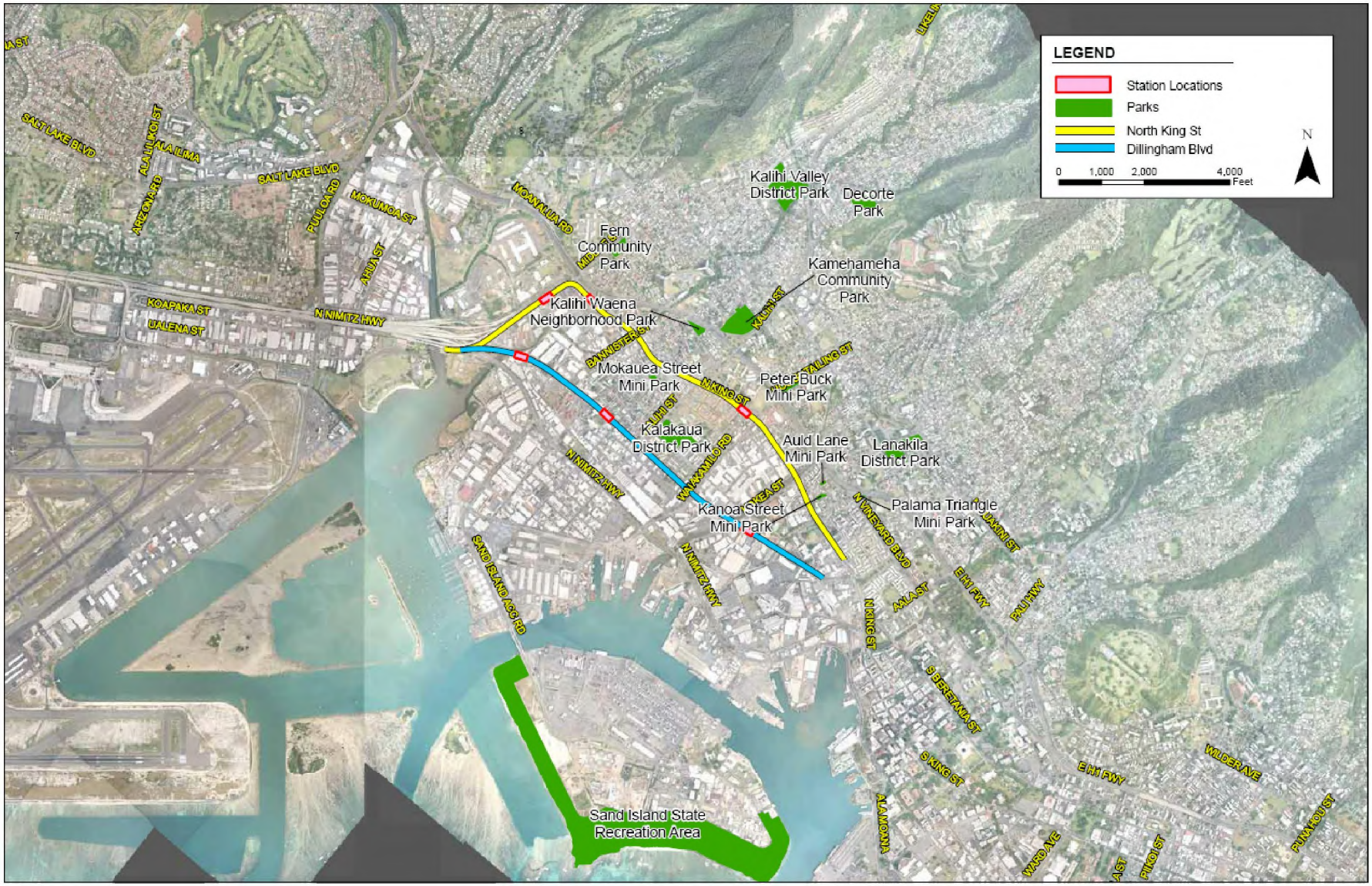

Figure 4-14. Parks and Golf Courses (IV. Middle Street to Iwilei)

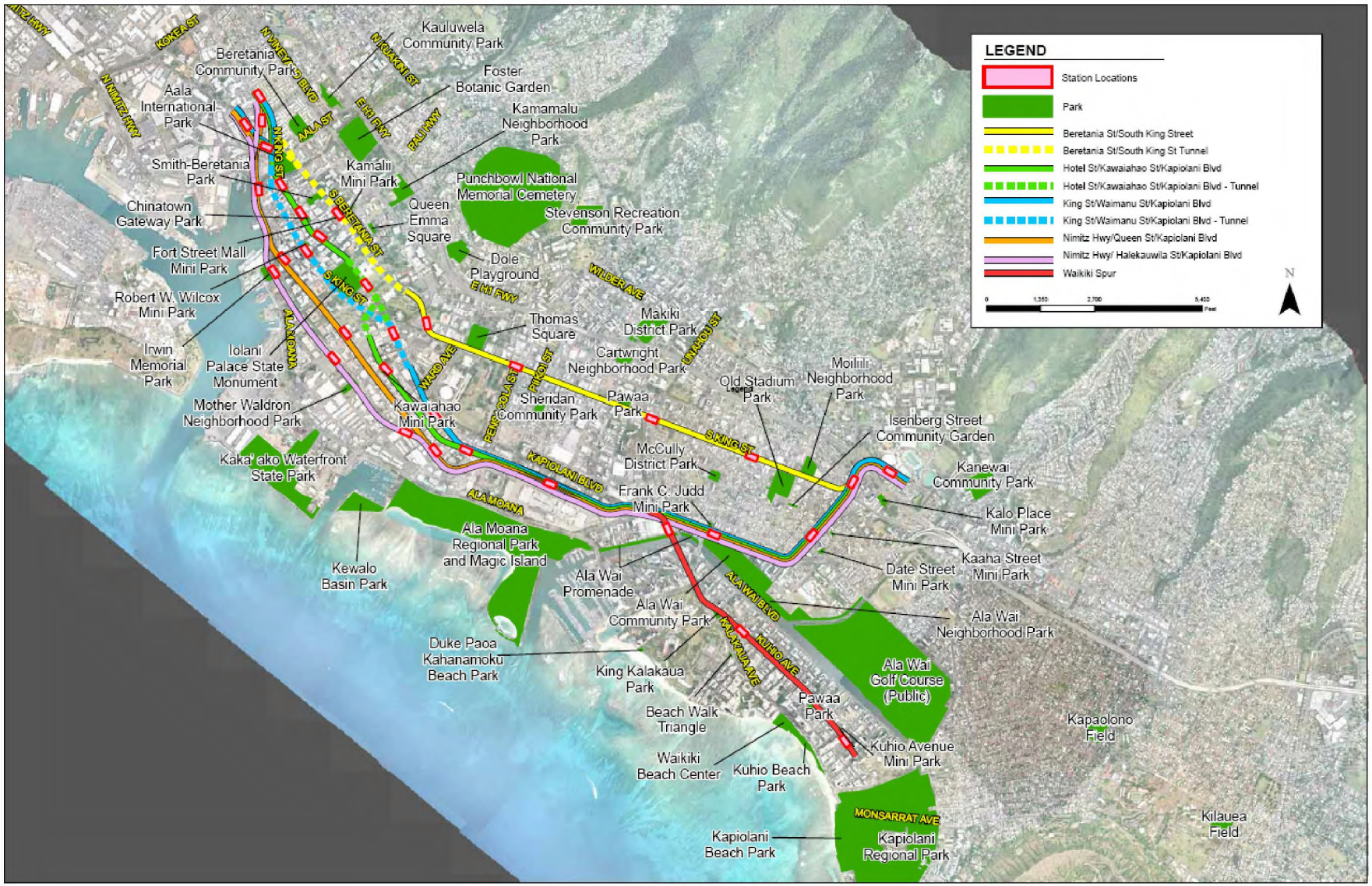

Figure 4-15. Parks and Golf Courses (V. Iwilei to UH Mānoa)

Table 4-10. Number of Parks and Golf Courses in the Study Corridor

Location	Parks	Golf Courses
Section I. Kapolei to Fort Weaver Road	10	3
Section II. Fort Weaver Road to Aloha Stadium	21	1
Section III. Aloha Stadium to Middle Street	6	0
Section IV. Middle Street to Iwilei	2	0
Section V. Iwilei to UH Mānoa	29	1
TOTAL	**68**	**5**

Source: *http://honoluludpp.org*

Utilities

Utility service providers located within the corridor study area include the Hawaiian Electric Company (HECO), the City and County of Honolulu Board of Water Supply (BWS) Honouliuli Wastewater Treatment Plant, The Gas Company, Hawaiian Telcom (formerly Verizon Communications), and Time Warner Cable (TW). Utility lines (both above- and below-ground) generally follow most public transportation corridors, and often cross over major corridors via elevated pedestrian and roadway crossings. It is anticipated that multiple physical utilities are located within, adjacent to, or traverse the transportation corridors within the study area. These include electrical transmission systems and distribution systems; telecommunication cables, telephone fiberoptic cables, cable television coaxial and fiberoptic cables, roadway lighting, irrigation lines, sewer force mains, drainage or stormwater conveyance systems, and sewage treatment plants.

Non-Motorized Transportation

Bicycle Travel

The State of Hawai‘i has approximately 208 miles of existing bicycle facilities statewide, and O‘ahu has the largest amount at 98 miles according to *Bike Plan Hawai‘i* (HDOT, 2003a). There are 24.8 miles of bikeways within the PUC, the longest being the Pearl Harbor Bike Path extending from near Aloha Stadium to Waipi‘o Peninsula (Waipahu) (DTS, City and County of Honolulu, 1998). Bicycling and walking constitute 11 percent of total daily trips made on O‘ahu per *Bike Plan Hawai‘i* (HDOT, 2003a). *Bike Plan Hawai‘i* (HDOT, 2003a) defines the various types of bikeway facilities as follows:

- **Shared Roadway**. A street or highway that is open to both bicycle and motor vehicle travel, but has no special signage for bicycles. Shared roadways typically feature lane widths that are 12 feet or less, with no shoulders.
- **Signed Shared Roadway**. A street or highway that is specifically designated by signs as a preferred route for bicycle use. Signed facilities generally should meet or exceed widths of 14 feet for curb lanes or 4 feet for paved shoulders. In limited cases, mitigating factors may result in designation of a signed shared roadway even where these dimensions are not met.

- **Bicycle Lanes**. A section of roadway designated by striping, signing, and/or pavement markings for preferential or exclusive use by bicyclists. It delineates the right-of-way assigned to bicyclists and motorists.
- **Shared Use Path**. A bikeway physically separated from motorized vehicular traffic by an open space or barrier, and located either within the highway right-of-way or with an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.

Table 4-11 and Figure 4-16 summarize O'ahu's total existing, developing, and proposed bikeway facilities.

Table 4-11. Summary of O'ahu Bicycle Bikeway Facilities[1]

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	30.1	33.6	34.3	98.0
Underway	18.8	4.6	14.3	37.7
Proposed	171.8	49.7	37.4	258.9
Proposed*				91.4
Total Network	220.7*	87.9*	86.0*	486.0

Notes: *Additional bicycle facilities are proposed in the Honolulu Bicycle Master Plan

Source: *Bike Plan Hawai'i* (2003), Section 5.2 and Table 6-1.

Several bikeway projects are currently in various stages of completion. The *Honolulu Bicycle Master Plan* (City and County of Honolulu, 1999) and *Bike Plan Hawai'i* (HDOT, 2003a) includes the following concepts for improving bicycling in the 'Ewa and PUC regions:

'Ewa

- **Kapolei Area Bikeway Plan**. Provide a circulation system with separated pedestrian and bicycle paths, and convenient routes for public transit service. In addition, provide supporting facilities such as bike trails, bicycle racks at commercial centers, bicycle storage facilities at employment centers, and bus shelters at bus stops.

PUC

- **Lei of Parks**. A system of paths and bike lanes that links regional and local parks from Aloha Tower to Diamond Head in urban Honolulu.
- **Bike-Friendly Route from Pearl City to Kāhala**. A bicycle-friendly route providing connections between Pearl City and Kāhala (across urban Honolulu), tailored to the more experienced cyclist.
- **College Access Network**: Bikeway improvements on roadways leading and adjacent to colleges and universities within Honolulu.

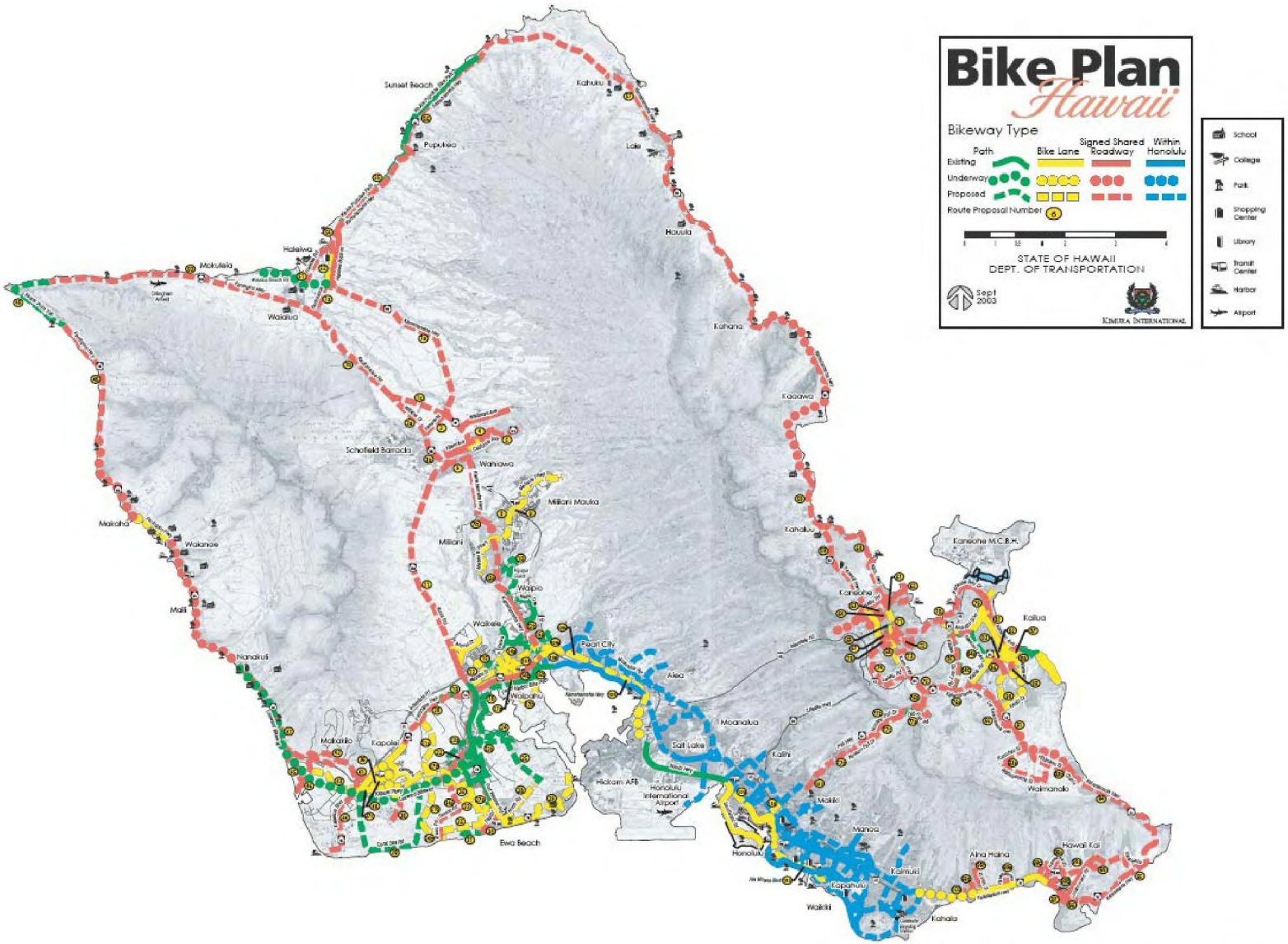

Figure 4-16. Existing and Proposed Bikeways

Pedestrian Facilities

O‘ahu has a developed pedestrian trail system, several components of which exist entirely or in part within the project study area. The study area also contains other areas of concentrated pedestrian activity, including pedestrian malls (e.g., Fort Street Mall, College Walk Mall, and Union Street Mall) and public beach access. For example, heavy pedestrian traffic occurs daily in and around areas such as Downtown, Waikīkī, Ala Moana, and University. On Ala Moana Boulevard, Kūhiō Avenue, Kalākaua Avenue, Ala Wai Boulevard, and mauka and makai of these four major corridors, improvements to enhance the pedestrian experience have recently occurred (Waikīkī Livable Community Project, 2003). Improvements that include landscaping and shading on sidewalks and street medians, historic-style lighting fixtures, textured sidewalk surfaces, furnishings such as benches, and widening sidewalks have all enhanced pedestrian mobility, safety, and experience.

Community Cohesion

Communities and neighborhoods can be defined by their natural resources, residential populations, and development characteristics (e.g., urban or rural). A description of general land use character and development patterns helps identify the people and neighborhoods within a given community. Information obtained from cultural studies can also help identify the ethnic and social structure of individual neighborhoods. Identification of resources and facilities available to the public also helps define whether residents’ needs are met within the community or must be obtained from outside of the community. Combining this data helps determine the structure of individual communities and their setting, boundaries, and resources, which helps determine the potential for impacts related to introduction of a modified or new transportation system.

Most O‘ahu neighborhoods contain the basic building blocks for community cohesion including commercial districts, schools, parks, and other services. However, the overall rate of change on O‘ahu hinders community cohesion in some communities. Recently, the principle change has been population growth in the ‘Ewa Plain and Central O‘ahu. The urbanization and redevelopment of the PUC over the last several decades, such as in Kaka‘ako, has also affected community characteristics.

The sense of community in Hawai‘i frequently comes from associations with ethnicity and family rather than neighborhood of residence. This is partially caused by the diversity of ethnicity in Hawai‘i. Ethnicity networking is common in Hawai‘i and creates a cohesion within ethnicities, but this cohesion is not based on physical neighborhoods. Therefore, it is less affected by physical barriers to travel and more affected by improved transportation than by locational community. Some churches and other organizations focus on certain ethnicities, such as the Korean Baptist Church or the Chinese Chamber of Commerce. Other resources, such as the Japanese Cultural Center and the FilCom Center, provide ethnicity-specific resource and cultural programs. These groups and centers draw people from all areas of O‘ahu, not just from specific neighborhoods.

In Hawai'i there is a fairly strong association with the high school from which a person graduated. Although this association is strong, it does not necessary result in community cohesion because:

- Students commute to several private schools which lessens geographic homogeneity among students;
- Graduates often move to the mainland for work and/or school after graduation; and
- Graduates often find they cannot afford to purchase a home or continue to live in the community they grew up in, due to escalating home and rent prices.

Elected political divisions on O'ahu are much larger than neighborhoods. The smallest political divisions are State Representatives, not city-level representatives. There are nine members of the City and County of Honolulu City Council, and council members' districts are much larger than specific neighborhoods. Each district includes a wide variety of neighborhoods with varying issues and needs. This level of representation at the local level limits neighborhood cohesion. The neighborhood boards are designed to provide local representation, but are advisory in nature.

With some exceptions, these and other factors tend to limit the development of neighborhood cohesion on O'ahu. Some communities on O'ahu have a level of community cohesion above normal. Those communities tend to be older and more established, with single-family homes and partially segregated from other communities so there are fewer non-residents passing through. A few of these communities are located along the study corridor or near the proposed transit alignments, because the alignments tend to be along well established major regional commercial thoroughfares. Examples of communities with elevated community cohesion on O'ahu include:

- Old plantation communities such as Kunia, Waialua, and old 'Ewa Villages. These communities' cohesion is fading because the plantations have closed, resulting in job loss, and the surrounding areas are developing quickly.
- The valleys of Honolulu, such as Mānoa, Pālolo, and 'Āina Haina. The relatively cloistered feel and long history of these communities, together with having their own schools and commercial areas, provide an enhanced degree of cohesion.
- The more remote communities, such as Kahuku, Waialua, and Mākaha. The remoteness and relatively long history of these "country" communities creates a heightened sense of commonality among residents. The fact that they also have their own schools and commercial areas also enhances community cohesion.

The following sections briefly discuss the cohesion of each community through which the transit alternatives would pass.

Section I. Kapolei to Fort Weaver Road

Kapolei

This area has below-average community cohesion relative to the rest of O'ahu. Factors lowering the cohesion include the fact that the community is relatively new, has undergone many changes recently, and continues to grow rapidly. Many residents have

relocated from other areas of O'ahu or moved from out of state. Evidence of these changes include: 1) much of the area was used to grow sugar cane up until the 1990s, 2) Barber's Point Naval Air Station closed in 1999, and 3) Kapolei High School graduated its first class in 2004 but has already grown to be among the largest high schools in the state. As a result, overall community cohesion is not strong.

Although much of this area is relatively new and highly fluid from a community perspective, a few enclaves with longer histories and developed communities exist. The community of Makakilo, on the slopes above Kapolei, has been present longer than most of Kapolei, is separated from Kapolei by the H-1 Freeway and Farrington Highway, and has its owns schools and parks. Previously, Makakilo residents dominated the area and the shopping center at Farrington Highway and Fort Barrette Road was called the "Makakilo Shopping Center." Now it is referred to as the "Kapolei Shopping Center." The Makakilo community is relatively cohesive for this area due to its relatively large size, connectedness, and longevity. Makakilo residents feel overwhelmed by expansion in Kapolei and troubled by the growing pains that have accompanied that growth after enjoying a relatively better quality of life in the 1980s.

Community-wide concerns include:

- Traffic congestion within the community and in getting to Honolulu for work;
- Community development (particularly building and maintaining parks, roads, schools, and other infrastructure as housing is added) and plans for the Kalaeloa Community Development District;
- Public health and safety issues due to industrial operations at Campbell Industrial Park, Makakilo Quarry, and Waimānalo Gulch Landfill; and
- Homelessness.

'Ewa

Similar to Kapolei, this area has less than average community cohesion for O'ahu. Factors limiting community cohesion include:

- Rapid growth and building on former sugar cane land (similar to Kapolei).
- The style of recent development in 'Ewa has been segmental with developments (such as 'Ewa by Gentry) and divided by walls, highway, and golf courses. Most developments have relatively few access points off major roads and utilize cul-de-sacs. This style of development generally hinders large-scale community cohesiveness but can generate smaller-scale associations.
- Most residents were born and attended schools outside the area.
- Residents spend a considerable amount of time commuting to and from work, which limits their time for community.

As described previously, the area of 'Ewa through which the transit alternatives run are relatively new communities, with the exception of Renton Village and other small old sugar plantation communities in the vicinity of the former 'Ewa Sugar Mill. Those old plantation-era communities have long histories and strong community ties. However as

the area grows and the former plantation population ages, those communities are being diluted and overwhelmed.

The ʻEwa community was excited when, in 2005, the ʻEwa Beach Little League team won the Little League World Series. Although the team was referred to as the ʻEwa Beach team, the kids on the team attended schools in ʻEwa, Waipahu, Pearl City, Mililani, Kalihi, and Mānoa. This spread suggests that although the event provided some recognition for the area, it did not generate much cohesion.

Community-wide concerns have brought the community together. The concerns are similar to those in the neighboring Kapolei area, and include:

- Traffic congestion within the community and getting to Honolulu for work; and
- Community development(particularly building and maintaining parks, roads, schools, and other infrastructure as housing is added) and staying true to requirements within the historic character of the old ʻEwa Villages.

Section II – Fort Weaver Road to Aloha Stadium

Waipahu

Waipahu has above-average community cohesion for Oʻahu. Factors contributing to this cohesion include:

- It is a relatively old high-density community constrained by geography and roads.
- Schools and businesses are located within the community and have long histories of patronage.
- The community is noticeably rich in Filipinos and Samoans. The Filipino and Samoan community has lived in Waipahu for multiple generations and many cultural resources, ranging from restaurants and stores to community centers and churches, are well established and attended.

Although these factors have developed an above-average cohesion, the growth of the surrounding area and closing of the former Waipahu Sugar Mill in 1995 has impacted cohesion. The closing of the mill means that more of the population has had to travel outside the community for work.

Community-wide concerns include:

- Traffic congestion between Waipahu and Honolulu;
- Homelessness, unemployment, and crime; and
- Revitalizing business within Waipahu, particularly by redeveloping the former sugar mill area.

Pearl City

Overall, Pearl City has an average level of community cohesion for Oʻahu. The vast majority of residents in Pearl City live on the mauka side of the H-1 freeway and Kamehameha Highway. Kamehameha Highway, where the proposed transit alternatives

would be built, is primarily a regional (not neighborhood) commercial district with relatively few residents, so it lacks cohesiveness. The Pearl City area has its own schools and parks, but the commercial areas tend to be regional shopping areas consisting of big-box retailers and malls rather than community shopping areas. Pearl City is a diverse (average for O'ahu), primarily single-family home residential area. Its western portion is mauka of Kamehameha Highway and consists of a large connected development, but the eastern section consists of residential areas segregated by natural streams and gulches. The style and age of development and presence of schools and parks make Pearl City mauka of Kamehameha Highway a fairly cohesive community, but the lack of neighborhood shopping detracts from that cohesiveness.

Community issues:

- Traffic issues related to maintaining acceptable living conditions and quality of life continue to be a central theme in neighborhood residents' discussions. Some community members have expressed concern about non-residents (e.g., residents from Waipahu and 'Ewa) increasingly using the Kamehameha Highway transportation corridor as a thoroughfare and less congested alternative route to Downtown. The Kamehameha Highway Corridor Task Force is currently studying improvements to aesthetics, traffic, and safety along this heavily used corridor.
- Homelessness and graffiti.
- Impacts from the upslope Waiawa development on the community.

'Aiea

'Aiea as a whole has an average community cohesion, similar to Pearl City; but a few relatively isolated and small residential communities between the H-1 freeway and Pearl Harbor do have a community identity and association. The community between Aloha Stadium and Pali Momi Street is a primary example – it is older and has its own schools, parks, and shopping areas. Closure of the sugar refinery and the extent of recent development in the area has generally detracted from community cohesion in these small pockets of older communities.

Community issues in 'Aiea are similar to those in Pearl City.

Section III – Aloha Stadium to Ke'ehi Interchange

Airport

The only residences in this area are military personnel in the Catlin Housing area. Due to its transient character, military housing does not typically generate much cohesion. However, because they are relatively homogeneous (same age, same employer, and all relatively new to Hawai'i) and have a common responsibility (national defense) a certain amount of cohesion is generated, which is different from the normal cohesion generated in Hawaiian communities.

Community cohesion is not typically thought to occur within light industrial areas such as Māpunapuna and the Airport. However, constant flooding within the low-lying areas of the Māpunapuna Commercial District has caused some Māpunapuna businesses to

organize and form the Māpunapuna Sand Island Kalihi Kai Tenants Association. No notable community or business associations have been identified within the airport area or Māpunapuna business district.

Āliamanu-Salt Lake

The three primary non-military communities in this area have distinct identities, but all have relatively average community cohesion for O'ahu.

Foster Village is an average community for O'ahu in terms demographics. Positive influences on cohesion include the fact that the neighborhood has relatively good internal connectivity, a few good central parks, and is relatively isolated from other communities by highways, roads, and military installations. Various retailers and shopping centers are also located within this community. Salt Lake Shopping Center, Costco, and K-Mart are just a few of the many vendors within the area. On the negative side, Salt Lake Boulevard separates the residential area from schools, and nearly a third of the residents are renters.

'Āliamanu's population is half Filipino, similar to Waipahu, giving it an ethnic identity the other communities in the area do not have. Otherwise, conditions in 'Āliamanu are similar to Foster Village except that there is slightly better connectivity with commercial areas but less with playgrounds.

Salt Lake is also demographically average for O'ahu, but the single-family areas tend to have an elevated percentage of Japanese and to be relatively well off for O'ahu. The high-rise area tends to have below-average income. Factors that positively influence cohesiveness in the western single-family home area includes good connections with schools, parks and commercial areas. The nearby high-rise area is also well connected with these facilities, but more than half the residents are renters. The turnover of military personnel in this area detracts from community cohesion to a degree.

Community issues in the area include:

- Transportation and parking;
- Graffiti; and
- Beautification of Salt Lake Boulevard.

Moanalua

Major activity centers and trip generators in this area include the Tripler Army Medical Center, which is visible as the large pink-colored facility on the Mauka-Koko Head side of the valley. This is the principal U.S. military medical facility for Asia and the entire Pacific Basin. Kaiser Permanente Moanalua hospital is a private facility.

The privately owned and operated Moanalua Gardens Park is also located within this community. This renowned park is known for hiking, hosting major hula festivals such as the historically noteworthy Prince Lot Hula Festival, and housing the globally famous

advertising icon "the Hitachi tree", a large monkeypod tree used by the Hitachi Corporation as a corporate symbol since 1973.

Section IV - Ke'ehi Interchange to Iwilei

The Kalihi-Pālama community has an average level of community cohesion for O'ahu. Factors that build cohesion in the area include:

- Certain ethnic groups are concentrated in the area, particularly recent immigrants who still speak their native language.
- The area is largely self contained and well connected with schools, parks, and commercial areas in close proximity.
- The area has a high density of social services, churches, and community groups that tend to be oriented toward specific ethnic target groups.

However, a number of factors detract from these positive factors, such as:

- Several roads in the area are major thoroughfares that divide the community and result in a large influx of non-residents through the area.
- Over half the residents are renters and live in small walk-up apartment buildings or single family dwellings, making the neighborhood fairly transitory.

Community issues in the area include:

- Transportation and parking;
- Crime, homelessness, and graffiti; and
- Trash and dumping.

Section V – Iwilei to UH Mānoa

Downtown

Chinatown has a distinct identity, but most of the residents live in relatively new multi-unit high-rise buildings. Chinatown, as would be suspected, retains a large Chinese population but also has a Korean population. The other downtown areas, which also consist primarily of newer high-rise condominiums and apartments, do not have any particular identity. The associations within each high-rise tower provide a certain degree of community cohesion. For the Chinatown area, this cohesion is strengthened by the surrounding historic district that reflects the residents' heritage and caters to their needs.

The multitude of events that take place downtown do not necessary cater directly to downtown residents. Events such as St. Patrick's Day, Mardi Gras, state events, and Hawaiian events are attended by people from around the state and do not necessarily build neighborhood-level cohesion. Although the Chinese New Year celebration brings together the local Chinese community, a diverse range of people from around the state attend the celebration and Chinese groups from all over the island (not just Chinatown) participate.

Chinatown is not exclusively Chinese. New immigrants have opened stores and restaurants in the area. Many Filipino and Vietnamese restaurants are now located in Chinatown, reflecting their immigration to Hawai'i after the Chinese. Chinatown's ever-shifting complexion and the fact that it (like the surrounding downtown area) is daily overwhelmed by people commuting from the suburbs to jobs and events in town detract from the area's community cohesion.

Community issues in the area include:

- Creating/preserving green space;
- Homelessness, drugs, crime and prostitution; and
- Managing night-time construction work to limit noise (generally construction is conducted during evening hours to avoid lane closures during the day).

Ala Moana-Kaka'ako

Cohesion among commercial establishments in this area is essentially controlled by General Growth Partners, who manage both the Ala Moana Center and Ward developments. The Honolulu Community Development Authority (HCDA) is also a major influence because it oversees redevelopment of the Kākā'āko area.

Community cohesion in the area is not particularly strong. The degree of recent and ongoing change in the neighborhood and the high percentage of renters has eroded cohesion. The greatest changes in the area revolve around the building of high-priced condominiums. These new buildings are replacing old light industrial businesses where nearby residents used to work. The lack of neighborhood-level shopping also detracts from cohesion. Most commercial establishments cater to the larger audience that comes to the area rather than to people who live in the area. A few exceptions to this rule exist along Beretania and King Streets in the more mauka portion of the Ala Moana neighborhood, which cater to the area's Korean population.

The primary issue of interest within this community is how the area is redeveloped. Suggestions for redeveloping the area include: creating more park space; creating other 'ewa-diamondhead and mauka-makai "main street" corridors; adopting transit-oriented development standards; making pedestrian travel (including bicycle traffic) more inviting; and creating more on-street parking and a parking authority. Concerns also exist about the number of bars and adult establishments in the area, and the crime that accompanies these activities.

Makiki-Tantalus

The Makiki area near South King Street, where a proposed Alternative 4 alignment would run, does not have any particular community cohesion. Due to the presence of the H-1 Freeway, residents makai of the freeway are more closely related with residents of Kākā'āko and Ala Moana, discussed previously. Although all roads in this neighborhood provide good connectivity, they are all major regional thoroughfares, which detracts from the area's cohesion. A sizeable percentage of the residents makai of H-1 are also renters, which further detracts from the area's cohesion.

The area mauka of H-1 has a higher degree of cohesion, but not an elevated or unusual level. These residents are more closely related to Mānoa and Tantalus residents.

Community issues in the area include:

- Trash and bulk items on the street;
- Lack of sidewalks on some main streets; and
- Traffic and lack of parking.

Waikīkī

The permanent residents of Waikīkī are diverse, but there are more Caucasians than other areas of O'ahu. Almost all residents live in relatively large apartment or condominium buildings. Many residents are retirees. Although Waikīkī is not thought of as a place to raise a family, there is an elementary school at its eastern end. Although it is possible to live, work, and shop in Waikīkī, cohesion is reduced by the large tourist and transient population.

Community issues in the area include:

- Redevelopment that causes construction-related inconvenience and lost amenities such as parking (recent projects have acquired street parking leaving few public parking areas);
- The excessive number of street closures for parades and festivities (Kalākaua Avenue was closed more than 60 times for parades in 2005); and
- Crime and noise.

McCully/Moʻiliʻili

Like all of Hawai'i, this community is fairly diverse, but it is home to a higher percentage of Japanese than average for O'ahu. The community retains some of the cohesion it had during its heyday after World War II and before Honolulu Stadium was demolished in 1976. A relatively large number of community businesses and facilities still exist, including the Moʻiliʻili Community Center and the Japanese Cultural Center. Since the 1970s the area has been transformed by a number of medium to large apartment and condominium buildings. The influx that accompanied that transformation, which included many renters including UH students, eroded community cohesion. Today community cohesion in this area is average for Honolulu.

Community issues in the area include:

- Balancing the influence of UH Mānoa and its large student body with residents' interests in commercial and social activities and development;
- Retaining the old town feel of Moʻiliʻili;
- Traffic and parking, with through traffic to UH and Waikīkī passing through McCully and Moʻiliʻili;
- Redevelopment displacing existing residents or raising commercial or residential property leases or rental rates; and

- Noise.

Mānoa

Because of its relative isolation (in a valley), dedicated commercial area (Mānoa Market Place and surroundings), and history, Mānoa has a higher than average community cohesion. Organizations such as Malama o Mānoa help galvanize the community. Many of the residents in Mānoa are long-time, multigenerational residents who have inherited their homes from their parents or grandparents. These factors have led to a higher than average sense of community and interaction among Mānoa Valley residents. However, in the area nearest UH Mānoa where the transit alignment enters Mānoa, the community is not as cohesive as the more mauka area. In the vicinity of the university, more homes have become rental properties used by students and temporary faculty. The residents in this area are also more likely to utilize the commercial areas in nearby Mo'ili'ili rather than traveling further into the valley for their needs. Therefore, the residential community immediately surrounding UH Mānoa has only average cohesion for Honolulu.

Community issues in the area include:

- Preserving views and maintaining its low-density residential character and lush open-space valley aesthetic—especially on the hillsides and ridges;
- Preserving the valley's historic elements; and
- Flooding.

Diamond Head-Kapahulu

The Diamond Head-Kapahulu neighborhood area has slightly above-average neighborhood cohesion. However, some sub-areas within this part of Honolulu differentiate themselves from each other.

St. Louis Heights, which is a single-family community on Waiahila and Kalaepohaku Ridges, has slightly above-average community cohesion. Its isolation (only one main road connects the area with surrounding communities) and long history improves cohesion. Its cohesion is weakened by a lack of schools, playgrounds, or a commercial area within its limits. Also, residents do not stroll the neighborhood often because many roads are steep and lack sidewalks.

Kapahulu has two sides: west of Kapahulu Avenue is primarily small apartment buildings with a higher percentage of renters and east of Kapahulu Avenue is more single-family homes. Both sides share the large commercial area along Kapahulu Avenue. The west side has a below average cohesion due to its makeup and the east side has an average cohesion.

Diamond Head is a relatively affluent area with above-average cohesion for Honolulu. Many parks exist in the area and the streets are well connected. There A commercial area along Monsarrat also meets the community's needs.

Community Heritage

A cultural practices and resources study included a survey of all ethnic groups and individuals that had information on cultural practices within the study area. The specific details of the study are summarized in the *Cultural Resources Technical Report* prepared for this project.

This study defined cultural practices to be inclusive of Hawai'i's many traditions and ethnicities. The definition of cultural practices within the urbanized areas included traditional practices within that setting (instead of urbanized cultural practices). In the rural areas, specifically Kapolei to Fort Weaver Road, a more traditional definition of cultural practices was used. *Traditional* refers to beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice, and are important in maintaining the community's continuing cultural identity. Specifically, this includes traditional land use, life ways, hunting or gathering, agricultural practices, religious practices, and things of cultural importance to the community.

The *Cultural Resources Technical Report* identified practices that varied from one-time annual events (Aloha Week Festival) to regular or ongoing events. Approximately 1,005 cultural practices, sites, and activities were identified within the study area. These practices, sites, and activities included fishing, gathering, lei making, churches, parades, and lo'i kalo (taro cultivating).

The No Build Alternative includes existing transit and highway facilities and committed transportation projects anticipated to be operational by 2030. Committed transportation projects are those programmed in the O'ahu 2030 Regional Transportation Plan (ORTP) prepared by OMPO. Projects included in the ORTP would undergo planning and environmental review as part of their individual project development process.

Effects on demographics, environmental justice, public services and community facilities, parks and recreation facilities, utilities, non-motorized transportation, relocation and displacements, and community cohesion associated with development of the individual projects listed in the ORTP will be determined in the future as individual projects undergo planning and environmental review. However, for this proposed project, the No Build Alternative would not include construction of TSM, managed lanes, or fixed guideway structures or facilities; therefore, no long-term or construction-related impacts would occur. The No Build Alternative would not offer the enhanced mobility, regional connectivity, and accessibility in the project corridor that the TSM, Managed Lane, or Fixed Guideway alternatives would provide.

Demographic Characteristics

Population, Employment, and Housing

Regardless of project alternative, population, housing, and employment in the study corridor is expected to increase, as shown in Table 5-1 and Table 5-2. Population, employment, and housing are expected to change most in the 'Ewa DP Area; but the PUC DP Area would still be the greatest contributor of employment and housing. As shown in Table 5-1, projections for DP Areas within the study corridor indicate that population is expected to increase by 17 to 170 percent and employment is expected to increase by 16 to 290 percent by 2030. Additional analysis of projected employment demand, property values, and consumer impacts are discussed in the *Economics Technical Report* prepared for this project.

Table 5-1. Population and Employment Projections by Development Plan Area

DP Area	Population			Employment			Housing		
	2000	2030	Change	2000	2030	Change	2000	2030	Change
PUC	419,422	489,389	16.7%	359,440	416,022	15.7%	171,808	216,731	26.2%
Central O'ahu	148,208	189,599	27.9%	43,770	67,057	53.2%	45,878	63,666	38.8%
'Ewa	68,696	184,612	168.7%	15,255	59,699	291.3%	20,797	60,295	189.9%

Source: Department of Planning and Permitting, City and County of Honolulu. 2000-2030 Socioeconomic projections in five-year intervals by Development Plan area

Table 5-2. Population and Employment Projections within Half Mile of Stations

Location	Population[1]			Employment[1]		
	2000	2030	Change	2000	2030	Change
Alternative 1: No Build						
No Build Alternative	N/A			N/A		
Alternative 2: Transportation System Management						
TSM Alternative	N/A			N/A		
Alternative 3: Managed Lane						
3a. Two-Way Option	6,945	6,897	-0.7%	12,278	12,795	4.2%
3b. Reversible Option[2]	N/A			N/A		
Fixed Guideway Alternative (full-length system by section)						
SECTION I. Kapolei to Fort Weaver Road						
Kamokila Boulevard/Farrington Highway	3,699	30,587	726.8%	2,041	18,922	826.9%
Kapolei Parkway/North-South Road	3,732	42,731	1,044.8%	2,013	21,069	946.5%
Saratoga Avenue/North-South Road	3,966	44,311	1,017.2%	2,057	22,957	1,015.9%
Geiger Road/Fort Weaver Road	13,454	35,296	162.3%	2726	17,427	539.4%
SECTION II. Fort Weaver Road to Aloha Stadium						
Farrington Highway/Kamehameha Highway	25,346	28,582	12.8%	14,381	20,026	39.2%
SECTION III. Aloha Stadium to Middle Street						
Salt Lake Boulevard	19,179	19,519	1.8%	4,618	4,877	5.6%
Makai of Airport Viaduct	8,969	9,393	4.7%	20,226	20,734	2.5%
Mauka of Airport Viaduct	7,706	8,147	5.7%	15,872	16,511	4.0%
Aolele Street	7,064	7,534	6.6%	22,157	22,916	3.4%
SECTION IV. Middle Street to Iwilei						
North King Street	29,689	33,602	13.2%	21,386	22,991	7.5%
Dillingham Boulevard	22,573	28,232	25.1%	37,090	40,282	8.6%
SECTION V. Iwilei to UH Mānoa						
Hotel Street/Kawaiaha'o Street/Kapi'olani Boulevard	179,430	283,703	58.1%	360,239	432,386	20.0%
King Street/Waimanu Street/Kapi'olani Boulevard	137,166	211,881	54.5%	227,285	276,561	21.7%
Nimitz Highway/Queen Street/Kapi'olani Boulevard	152,071	234,020	53.9%	265,441	322,097	21.3%
Nimitz Highway/Halekauwila Street/Kapi'olani Boulevard	154,826	255,759	65.2%	272,219	337,592	24.0%
Beretania Street/South King Street	134,490	193,320	43.7%	186,364	223,611	20.0%
Waikīkī Branch	47,520	56,285	18.4%	67,394	80,105	18.9%

Notes: [1] Represents the No Build condition
[2] No stations are associated with Alternative 3: Reversible Option

Long-Term Impacts

Alternative 2: Transportation System Management

The enhanced bus system would serve existing population and demographic groups. Bus system expansion would result in additional bus driver jobs and supporting positions within the transit authority. Improved travel conditions may attract new businesses to the project area, which could be expected to increase local employment opportunities.

Although enhancements under this alternative would be expected to serve future population and employment growth, they would not provide the potential capacity increase associated with Alternatives 3 and 4. This may not affect population or employment growth greatly, but some individuals may not locate near the project area if transit service is not considered adequate for their needs.

Normal economic cycles would be expected to have a greater influence on employment and housing conditions than the potential changes associated with transportation improvements alone. Additional right-of-way requirements for new transit centers, Park-and-Ride lots, and bus maintenance facilities have not yet been identified but would be less than the requirements for Alternatives 3 and 4 (see the following *Relocation and Displacements* section).

Alternative 3: Managed Lane

The Managed Lane Alternative would introduce a new elevated two-lane grade-separated facility for use by buses between Waipahu and Downtown Honolulu. This alternative would serve most of the primary neighborhoods in the overall project corridor. It would not extend as far east as Alternative 4, so would not directly serve the Waikīkī, McCully/Moilili, and Mānoa neighborhoods. These neighborhoods tend to be older, with fewer redevelopment or new development opportunities.

Given that these neighborhoods are largely built out, this alternative would not likely affect future population or housing growth there, but would support expected growth in the greater PUC. This would generally be consistent with projected population growth in the PUC, which is expected to be slightly less than projected growth in the Central O‘ahu area and considerably less than growth projected in the ‘Ewa area. It is possible that improved transportation service could have some influence on residential redevelopment or new development; but the potential for such opportunities in neighborhoods served by the Managed Lane Alternative would be less likely to occur than might occur with the Fixed Guideway Alternative. Where new housing units are constructed, rental costs or purchase prices for new units may be greater than current housing costs and may not be affordable to all residents. This impact would be greatest in lower-income areas such as the Kalihi-Pālama, Ala/Moana/Kakakko, and Downtown neighborhoods (see the following *Environmental Justice* section).

The new managed lane facility would improve travel conditions and may attract new businesses to the project area. Depending on the amount of future development or redevelopment that could result, opportunities to increase employment levels may also occur through the provision of new jobs associated with such development. The level of

this development potential is uncertain, and substantial direct impacts on employment have not been estimated.

If property acquisitions to accommodate this alternative's proposed improvements require displacing residential or commercial buildings, a slight impact on local population and employment characteristics may occur if residents or businesses in affected buildings do not relocate within the project area.

Alternative 4: Fixed Guideway

This alternative would affect a higher overall population than would Alternative 3. Alternative 4 would serve adjacent population groups within the area and support the growth forecast for the project corridor. With the project, some of this growth would be focused along the project corridor.

To the extent that population growth may be influenced by decisions on commuting options (such as the availability of transit service), the proposed project may contribute to decisions to reside or work along or near the proposed project route. The increased mobility between ʻEwa and Honolulu generated by Alternative 4 could make working and living in the outlying communities of ʻEwa and Kapolei more attractive to some individuals than it otherwise would be. That may cause greater than forecasted population growth in the ʻEwa area. However, this may be offset by transit-oriented redevelopment in the PUC. As with Alternative 3 where residential buildings would be displaced along the project route, there could be a reduction in local population if residences are not relocated within the project area (see the following *Displacements and Relocation* section).

The Fixed Guideway Alternative would affect more adjacent parcels than the Managed Lane Alternative, so it is possible that job losses associated with potential displacements could be greater under Alternative 4. This alternative would serve a somewhat larger area than Alternative 3, so it may also influence job conditions over a larger area. This would help offset potential impacts related to direct job losses from displacements. As indicated in the discussion of income, neighborhoods in Sections IV and V have higher unemployment rates than other neighborhoods along the project route. If the proposed project attracts new development or shifts employment opportunities to the project corridor, these neighborhoods could benefit from the potential to lower existing unemployment rates.

It is possible that improved transportation service could have some influence on residential redevelopment or new development. This alternative may contribute to the potential for new development within the greater neighborhood areas. In older neighborhoods, this could result in introducing newer units to the existing neighborhood. In less developed neighborhoods, this influence may encourage the introduction of additional housing units with a resulting increase in the overall number of units available in these neighborhoods. This impact may also result in affordability concerns for new housing units, especially in lower-income areas that under this alternative would include the Kalihi-Pālama, Ala/Moana/Kakakko, Downtown, McCully/Moilili and Waikīkī neighborhoods.

Construction Impacts

Alternative 2: Transportation System Management
The potential demand for employment or housing associated with temporary construction-related jobs would temporarily increase. However, it is anticipated that the current labor pool and housing market would address this demand. The impact of the TSM Alternative on employment and housing would be similar to the No Build Alternative and minor compared to the Managed Lane and Fixed Guideway alternatives.

Alternative 3: Managed Lane
Construction may attract new jobs to the project area. If construction workers find housing nearby, a slight increase in local population and/or a change in demographics may occur. The proposed project would increase local employment opportunities for temporary construction-related jobs. This impact would be expected to have a positive effect on unemployment levels. The project could increase the demand for construction workers in the region during periods of maximum activity. The demand for construction workers to complete the project may not be filled by the local pool of workers, because unemployment is low and the number of construction jobs is forecast to decline by less than 1,000 jobs in the near future. Therefore, the demand could result in an influx of temporary construction workers (*Economics Technical Report*, 2006).

A temporary increase in the demand for housing may occur, associated with the potential for construction workers to relocate in the project area and island overall. Most of this demand is expected to be addressed by the existing housing market, but a shortage of available housing for construction workers may occur. There may also be a period of increased cost in commercial and residential construction on the island due to supply/demand of construction workers and materials.

Alternative 4: Fixed Guideway
As with Alternative 3, new construction jobs may result from this alternative, and if workers relocate in the project area, population and/or demographic characteristics may change. The proposed project may increase local employment opportunities for temporary construction-related jobs. This could result in temporary decreases in unemployment levels if construction positions are filled by local workers. This alternative may also result in a temporary increase in the demand for local housing, as identified for Alternative 3. Some of this demand is expected to be addressed by the existing housing market, but there may be a temporary shortage of available housing for construction workers. There may also be a period of increased cost in commercial and residential construction in the region, due to demand for construction workers and materials. The demand created by Alternative 4 would be greater than Alternative 3 and would have a greater influence on the region's economy.

Transit Dependency

Long-Term Impacts

According to the *Transportation Impacts Report* prepared for this project, the Fixed Guideway Alternative shows total daily transit boardings increased by 36 to 42 percent

compared to the No Build Alternative. Similar to total boardings, all of the studied alternatives showed that transit service to transit-dependent communities is expected to increase in the future. Based on forecasts for transit boardings, Figure 5-1 shows the expected number of transit trip provisions to transit-dependent communities.

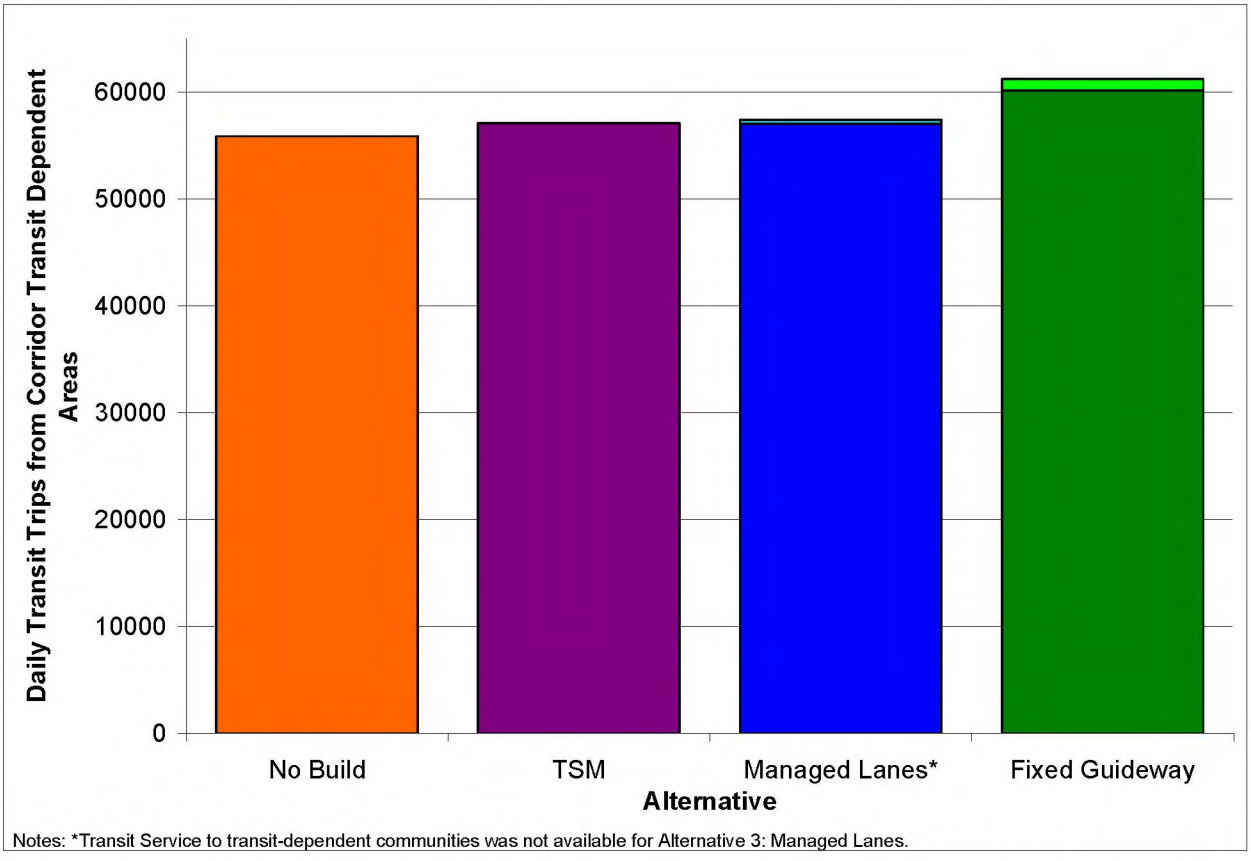

Figure 5-1. 2030 Transit Service to Transit-Dependent Communities

Without the proposed project, there would be almost 56,000 transit boardings per day. The Fixed Guideway Alternatives would provide the highest level of transit service with over 61,000 boardings per day. The TSM or Managed Lanes alternatives would provide over 57,000 boardings to transit-dependent communities.

Alternative 2: Transportation System Management

Projects included under the No Build Alternative that are also included under Alternative 2 would undergo planning and environmental review as part of their individual project development process. The TSM Alternative would offer enhanced mobility to residents and businesses in the project corridor, but it would not be as great as the regional connectivity and accessibility provided by the Managed Lane and the Fixed Guideway alternatives.

Alternative 3: Managed Lane

The Managed Lane Alternative would provide only a few stops between Aloha Stadium and Middle Street. It may enhance regional mobility both transit and auto users by providing increased capacity and efficiency. Because the Managed Lane Alternative would provide only a few access points in high transit-dependent areas, it would provide user benefits in transit-dependent areas compared to the No Build Alternative. However, the proportion of transit service to user benefit for the entire corridor would be much lower than the potential proportion of transit service to user benefit provided by Alternative 4. The Managed Lanes Alternative would have a limited ability to improve regional accessibility compared to Alternative 4, but would provide quicker service between downtown and outlying communities than Alternative 2.

Alternative 4: Fixed Guideway

The areas that would be most well served by the Fixed Guideway Alternative are Sections IV and Section V, which have a high number of transit-dependent households within a half-mile of the corridor. The proportion of households in Sections IV and V that do not have a vehicle available ranges from 30 to 36 percent. These percentages of transit-dependent households are shown in Table 5-3.

From comparing Table 5-3 to Table 5-4, there is a clear correlation between transit dependency and transit trip demand. The higher the proportion of households with no vehicles, the higher the number of transit trips for that section.

As shown in Table 5-4, the higher the amount of transit services to transit-dependent communities, the higher the amount of total user benefits. Sections IV and V would have the highest amount of user benefits per transit trip to transit-dependent communities, because a greater number of transit services to transit-dependent communities are located within the areas of Section IV and Section V (with the exception of the Waikīkī Branch area). As shown in Figure 4-4, no substantial transit-dependent communities exist in Section III. The Waikīkī Branch area contains the highest amount of user benefits per transit trip to transit-dependent communities compared to all other alignments in all the other sections. The transit service to transit-dependent communities in Waikīkī is much less than the other alignments in the study corridor because it is a shorter alignment.

Construction Impacts

Alternative 2: Transportation System Management

Construction of bus enhancement facilities may require temporary relocation or removal of transit facilities/stops or temporary rerouting of transit routes. However, maintenance of access to such facilities and minimization of disruption would result in minimal impacts to transit-dependent users.

Alternative 3: Managed Lane

Lane closures, detours, and temporary relocation of transit facilities during construction may be required during construction. The impact would be more than the impact associated with the TSM Alternative but less than the Fixed Guideway Alternative.

Table 5-3. Households within a Half Mile of Stations with No Vehicles Available

Location	Occupied Housing Units	Transit-Dependent Households	Transit-Dependent Households (%)
Alternative 3: Managed Lane			
Two-Way Option			
Waiawa IC to Hālawa Stream	2,345	234	9.9%
Hālawa Stream to Pacific St.	263	11	4.0%
TOTAL	2,608	245	9.3%
Reversible Option*			
Waiawa IC to Hālawa Stream	N/A	N/A	N/A
Hālawa Stream to Pacific St.	N/A	N/A	N/A
TOTAL	N/A	N/A	N/A
Alternative 4: Fixed Guideway			
SECTION I. Kapolei to Fort Weaver Road			
Kamokila Boulevard/Farrington Highway	1,586	71	4.4%
Kapolei Parkway/North-South Road	1,645	100	6.0%
Saratoga Avenue/North-South Road	570	106	18.6%
Geiger Road/Fort Weaver Road	2,972	156	5.2%
SECTION II. Fort Weaver Road to Aloha Stadium			
Farrington Highway/Kamehameha Highway	7,977	924	11.5%
SECTION III. Aloha Stadium to Middle Street			
Salt Lake Boulevard	6,897	635	9.2%
Makai of Airport Viaduct	2,660	218	8.1%
Mauka of Airport Viaduct	2,405	227	9.4%
Aolele Street	2,075	200	9.6%
SECTION IV. Middle Street to Iwilei			
North King Street	5,545	1,649	29.7%
Dillingham Boulevard	4,168	1,458	34.9%
SECTION V. Iwilei to UH Mānoa			
Hotel Street/Kawaiaha‘o Street/Kapi‘olani Boulevard	38,091	12,747	33.4%
Hotel Street/Waimanu Street/Kapi‘olani Boulevard	34,450	11,363	32.9%
King Street/Waimanu Street/Kapi‘olani Boulevard	37,910	12,672	33.4%
Nimitz Highway/Queen Street/Kapi‘olani Boulevard	34,865	11,726	33.6%
Nimitz Highway/Halekauwila Street/Kapi‘olani Boulevard	28,667	10,232	35.6%
Beretania Street/South King Street	39,849	12,695	31.8%
Waikīkī Branch	14,534	4,913	33.8%

*There are no stations are associated with Alternative 3 (Managed Lane 3b, Reversible Option)

Table 5-4.
Summary of User Benefits for All Transit Trips to Transit-Dependent Communities

Location	Transit Service to Transit-Dependent Communities[1]	Total User Benefits to Transit-Dependent Communities[2]
Alternative 3: Managed Lane3		
Two-Way Option	57,413	102,873
Reversible Option	57,055	81,205
Alternative 4: Fixed Guideway		
SECTION I. Kapolei to Fort Weaver Road		
Kamokila Boulevard/Farrington Highway	2,280	17,322
Kapolei Parkway/North-South Road	1,122	7,633
Saratoga Avenue/North-South Road	1,103	6,043
Geiger Road/Fort Weaver Road	1,121	7,478
SECTION II. Fort Weaver Road to Aloha Stadium		
Farrington Highway/Kamehameha Highway	4,827	80,805
SECTION III. Aloha Stadium to Middle Street[4]		
Salt Lake Boulevard	N/A	N/A
Makai of Airport Viaduct	N/A	N/A
Mauka of Airport Viaduct	N/A	N/A
Aolele Street	N/A	N/A
SECTION IV. Middle Street to Iwilei		
North King Street	7,650	62,416
Dillingham Boulevard	7,826	75,396
SECTION V. Iwilei to UH Mānoa		
Hotel Street/Kawaiaha'o Street/Kapi'olani Boulevard	47,162	237,685
Hotel Street/Waimanu Street/Kapi'olani Boulevard	47,235	247,685
King Street/Waimanu Street/Kapi'olani Boulevard	46,707	205,662
Nimitz Highway/Queen Street/Kapi'olani Boulevard	47,109	234,712
Nimitz Highway/Halekauwila Street/Kapi'olani Boulevard	47,109	234,712
Beretania Street/South King Street	46,485	188,876
Waikīkī Branch	228	22,726

Notes:

1. By number of daily transit trips originating in 2030 from corridor transit-dependent areas for each alignment due to implementation of Alternative 4: Fixed Guideway.

2. Alternative 4: Fixed Guideway user benefits as compared to Alternative 1: No Build.

3. Data on transit service data to transit-dependent communities is not available for Alternative 3.

4. All TAZs within a half-mile of stations in Section III have proportions of households with no vehicles available that are below the threshold. Therefore, no transit-dependent communities associated with Section III of Alternative 4 were identified.

Alternative 4: Fixed Guideway
Construction of the guideway, maintenance, and station facilities may potentially require relocation, detours, and temporary lane closures of pedestrian and bicycle facilities. Due to the Alternative 4 alignment's greater length and the fact that the alignment corresponds with more transit routes, the construction impact to the transit-dependent population would be greatest.

Environmental Justice

The relocation or acquisition of commercial and residential uses may have a disruptive influence on a community by reducing housing or employment opportunities. Relocation of services such as schools, community and social facilities, and public services can have a disruptive effect on communities if those services are not reestablished within the community.

Executive Order 12898 requires federal agencies to identify and not disproportionately affect minority and low-income populations. The goal of identifying environmental justice concerns is to ensure fair treatment and meaningful involvement of all people regardless of race, color, national origin or income, from the early stages of transportation planning and investment decision making through construction, operations and maintenance

For the purposes of this project, environmental justice communities has been expanded to include areas that have high proportions of linguistically isolated households, to more broadly define communities of concern to fit O'ahu's diverse ethnic make-up. This section evaluates the effects of acquisitions, distribution of transportation benefits, and construction impacts on communities of concern.

Long-Term Impacts

Alternative 2: Transportation System Management
The TSM Alternative would provide an enhanced bus system based on a hub-and-spoke route network. It would convert the present morning peak-hour-only zipper-lane to a morning and afternoon peak-hour zipper-lane operation. It would include other relatively low-cost bus priority capital improvements on selected roadway facilities, and the completion of projects defined in the O'ahu RTP (which are also included in the No Build Alternative). Limited transportation improvements and the enhanced bus system with Alternative 2 would improve traffic operations on corridor roadways. These improvements would benefit low-income and/or minority communities by increasing accessibility to these communities and increasing mobility for community residents.

Under Alternative 2, two transit centers would be constructed, one at Pearl City and one at 'Aiea. This construction would potentially require property acquisition. At this stage of the project design, it is unknown whether parcels must be acquired in entirety or if only portions of some parcels may need to be acquired. Because few communities of concern are located in Pearl City and 'Aiea, it is unlikely any relocations of low-income or minority communities would be required.

Alternative 3: Managed Lane

As shown in Table 5-5, with the Two-Direction Option for the Managed Lane Alternative, in approximately 21 parcels located within potential low-income or minority communities, one parcel where a residential use occurs may be potentially affected by partial right-of-way acquisition. For the Reversible option, in approximately 17 parcels, one residential parcel may be affected by partial right-of-way acquisition. Partial acquisition of properties would not displace businesses or residences in these communities.

Similar to transit-dependent communities, the Managed Lanes Alternative would provide user benefits to transit-dependent areas compared to the No Build Alternative. The proportion of transit service to user benefit for the entire corridor would be much lower than the potential proportion of transit service to user benefit provided by Alternative 4. The Managed Lanes Alternative has limited ability to improve regional accessibility compared to Alternative 4, but would provide quicker service between downtown and outlying communities than Alternative 2.

Alternative 4: Fixed Guideway

Alternative 4 may also influence development or redevelopment around stations. For example, transit-oriented development may increase the demand for housing or commercial uses clustered around a station. If an EJ community is located near these stations, redevelopment could potentially displace businesses or residents, or increased rents or leases could force disadvantaged populations out of the area.

There is a clear correlation between the amount of user benefits and transit services to transit-dependent communities. As shown in Table 5-5, the higher the amount of transit services to EJ communities, the higher the amount of total user benefits. Sections IV and V would have the highest amount of user benefits per new transit trip to EJ communities, because Sections IV and V have a greater concentration of EJ communities than Sections I, II, or III.

Directly impacted parcels located within potential EJ communities are discussed in the following sections.

I. Kapolei to Fort Weaver Road

As shown in Figure 4-8, the Ko ʻOlina Resort expansion (where the Kapolei/Hunau station location is proposed) is identified as a potential EJ community. However, this parcel is currently vacant and would be dedicated to the City by the developer. No impacts to low-income or minority communities are anticipated to occur.

EJ communities in this section of the project corridor would be well served by the Fixed Guideway Alternative, because this area exhibits the highest amount of transit service to EJ communities in all of the sections.

Table 5-5. Impacts and Benefits to Communities of Concern (EJ)

Alternative	Parcels Directly Affected in EJ Communities		Transit Service to EJ Communities[2]	Total User Benefit to EJ Communities[3]
	Total[1]	Residential		
Alternative 3: Managed Lane				
Two-Direction Option	21	1	57,335	215,887
Reversible Option	17	1	57,577	232,064
Alternative 4: Fixed Guideway (by section)				
I. Kapolei to Fort Weaver Road				
Kamokila Boulevard/Farrington Highway	2	0	42,511	631,844
Kapolei Parkway/North-South Road	2	0	21,391	326,949
Saratoga Avenue/North-South Road	2	0	22,674	387,114
Geiger Road/Fort Weaver Road	5	0	23,338	399,418
II. Fort Weaver Road to Aloha Stadium				
Farrington Highway/Kamehameha Highway	2	0	14,981	237,506
III. Aloha Stadium to Middle Street				
Salt Lake Boulevard	5	1	10,070	167,323
Makai of the Airport Viaduct	8	0	10,601	191,476
Mauka of the Airport Viaduct	15	0	10,298	172,698
Aolele Street	8	0	10,309	172,773
IV. Middle Street to Iwilei				
North King Street	29	2	8,296	63,089
Dillingham Boulevard	23	0	8,419	73,764
V. Iwilei to UH Mānoa				
Hotel Street/Kawaiaha‘o Street/ Kapi‘olani Boulevard	10	1	12,794	54,390
King Street/Waimanu Street/Kapi‘olani Boulevard	39	1	12,589	38,940
Nimitz Highway/Queen Street/Kapi‘olani Boulevard	22	0	12,722	49,786
Nimitz Highway/Halekauwila Street/Kapi‘olani Boulevard	25	1	12,722	49,786
Beretania Street/South King Street	21	3	12,681	48,610
Waikīkī Branch	14	1	78	7,323

Notes: [1] Includes City owned, negotiated, or donated parcels

[2] By number of daily transit trips originating in 2030 from corridor transit-dependent areas for each alignment due to implementation of Alternative 4.

[3] Alternative 4: Fixed Guideway user benefits as compared to Alternative 1: No Build.

[4]Transit service data to transit-dependent communities data is not available for Alternative 3.

II. Fort Weaver Road to Aloha Stadium

As shown in Figure 4-8, Waipahu and the Pearl Ridge Center are identified as potential EJ communities. The Farrington Highway/Kamehameha Alignment would potentially impact two commercial parcels, one in Waipahu and one in Pearl Ridge. Based on conceptual engineering, the parcels would only be partially acquired and are not anticipated to displace any businesses.

The proportion of user benefit to transit service in EJ communities is higher in this study section than in Sections I or III, which correlates to the higher amount of user benefit. Implementation of the Fixed Guideway Alternative would have a positive benefit on transit service accessibility compared to the No Build Alternative.

III. Aloha Stadium to Middle Street

As shown in Figure 4-8, the Pu'uwai Momi Housing Complex, Radford Terrace, Māpunapuna, Pearl Harbor Complex, and Hickam Airforce Base are identified as potential EJ communities. The parcels that would be affected in the Pu'uwai Momi Housing Complex area are the Aloha Stadium and its overflow parking, in addition to a landscaping median between Kamehameha Highway and the Pu'uwai Momi Housing Complex. The Mauka of Airport Viaduct Alignment may partially acquire three commercial/industrial parcels in the Radford Terrace and Māpunapuna areas. It is unknown whether businesses would be displaced. The parcels that would be affected in the Pearl Harbor Complex and Hickam Airforce Base areas would be negotiated between the military and the City.

The proportion of user benefit to new transit service in EJ communities is approximately equal to Section I, showing that Alternative 4 would have an overall positive benefit in providing transit services to EJ communities compared to the No Build Alternative.

IV. Middle Street to Iwilei

As shown in Figure 4-8, the Fort Shafter, Kapālama, Kalihi Kai, Iwilei, and Kam Housing areas are identified as potential EJ communities. Up to 29 parcels would be affected by partial or full acquisition due to the proposed project's right-of-way requirements. In Iwilei, potential relocation of businesses near the Dillingham Boulevard Alignment would occur due to full acquisition of five commercial/industrial parcels. In Kalihi at the King/Owen Station, potential relocation of businesses near the North King Street Alignment would occur due to full acquisition of 11 commercial/industrial parcels.

According to Figure 4-8, Section IV has a greater concentration of EJ communities. Although the amount of transit service and user benefit is the lowest, the proportion of user benefit to new transit service provided by Alternative 4 in EJ communities is higher in this study section compared to Sections I, II, or II. This indicates that Alternative 4 would have an overall positive benefit in providing transit services to EJ communities compared to the No Build Alternative.

V. Iwilei to UH Mānoa

As shown in Figure 4-8, Iwilei, the Queen Emma Renewal Area, Chinatown, Kalākaua Housing, Pāwa'a, 'A'ala, and near Koa Avenue and 'Ōlohana Street in Waikīkī areas are identified as potential EJ communities. The Beretania Street/South King Street Alignment would potentially require full acquisition of five commercial or industrial parcels in Iwilei, which would potentially displace existing businesses. The King Steet/Waimanu Street/Kapi'olani Boulevard Alignment would potentially require full acquisition of two commercial/industrial parcels in Kalākaua Housing area and 11 commercial/industrial parcels in Iwilei. The Hotel Street/Kawaiaha'o Street/Kapi'olani Boulevard Alignment would potentially require full acquisition of two commercial parcels in the Kalākaua Housing area. Both of the Nimitz Highway alignments in this project corridor section would result in potential full acquisition of six commercial or industrial parcels in Iwilei and two commercial parcels in the Kalākaua Housing area. The Waikīkī Branch is not anticipated to require any full parcel acquisitions.

The proportion of user benefit to transit service in EJ communities is highest in this study section compared to any of the other project corridor sections. This indicates that Alternative 4 would have the most overall positive benefit in providing transit services to EJ communities in Section V compared to the No Build Alternative.

Construction Impacts

Alternative 2: Transportation System Management

Construction of bus enhancement facilities could affect low-income and/or minority communities if these facilities are located in or adjacent to those communities. However, impacts such as noise or dust from construction activities would be temporary.

Alternatives 3 and 4

Short-term construction impacts would include increased congestion on surface streets, noise, and dust during construction activities. Temporary construction easements may be required for properties adjacent to the proposed alignment. However, access to residences, businesses, parking, and other community amenities would be maintained. Impacts such as noise or dust from construction activities would be temporary.

Public Services and Community Facilities

Long Term Impacts

Alternative 2: Transportation System Management

The enhanced bus system that the TSM Alternative would provide could benefit public services by decreasing congestion and allowing ambulances and other emergency services to travel through the corridor more quickly. However, the increased number of buses would also somewhat hinder the travel of emergency and other public services vehicles. The TSM Alternative would also increase accessibility to community facilities. The TSM Alternative is not anticipated to involve right-of-way impacts on public or service buildings or community facilities.

Alternative 3: Managed Lanes

With the Managed Lanes Alternative, the delivery of emergency services would be improved by decreasing congestion and enhancing bus service. Operational benefits would be expected for public services, mostly because congestion would be eased through the corridor the construction of the grade-separated facility for certain vehicles. Because emergency response vehicles would qualify as High-Occupancy Vehicles (HOVs) and free-flow speeds for those vehicles would be ensured, their response time and mobility would increase.

The Managed Lane Alternative would largely use existing right-of-way and would not require acquisition of any community facilities (see Table 5-6). Improved bus service and HOV toll lanes would enhance mobility through the corridor, improving access to community facilities. The grade-separated facility would also likely reduce congestion for other roadway uses, thereby improving access to community facilities for all users. Additional bus service between Kapolei and other points ʻEwa of the PUC, as well as downtown Honolulu and UH Mānoa, would improve access to community centers.

Alternative 4: Fixed Guideway

With this alternative, long-term impacts could involve either the physical placement of the project on or adjacent to a community facility or a change in a community facility's operating environment. The number of parcels supporting community facilities that would be partially affected by physical placement is shown in Table 5-6. To the extent that community facilities function as places of social interaction, the displacement of a substantial number of these facilities could change the way that some residents gather socially. However as shown in Table 5-6, few community facilities would be directly affected by the Fixed Guideway Alternative. No facilities are anticipated to require full acquisition or displacement. Facilities could be negatively affected if access to these is viewed as restricted and less desirable or travel times are extended. These effects would be minor and would vary little between the alignments.

Under the Fixed Guideway Alternative, several right-of-way impacts would occur to public services buildings. Twenty-three community facilities throughout the five project sections would be partially impacted by right-of-way acquisition. Other potential impacts to public services in the corridor could occur later in the planning stage, when locations for stations and supporting facilities are determined. Overall, Alternative 4 would increase mobility and accessibility within the project corridor by reducing congestion, which may improve response time for emergency services. However, construction of the Fixed Guideway Alternative could limit or impede local access to specific public services such as police, fire, or emergency medical services if access is limited by the installation of structures near these facilities.

Table 5-6. Numbers of Community and Utility Facilities Affected

Alternative	Community Facilities[1]	Utility Facilities[2]	Park / Recreational Areas
Alternative 1: No Build			
No Build Alternative	0	0	0
Alternative 2: Transportation System Management			
TSM Alternative	N/A		
Alternative 3: Managed Lane			
Managed Lane Alternative	None Identified	1-Refuse 1-Electrical	2
Alternative 4: Fixed Guideway (full-length system by section)			
I. Kapolei to Fort Weaver Road			
Kamokila Boulevard/Farrington Highway	1-Health Service	2-Water	1
Kapolei Parkway/North-South Road	1-Health Service	2-Water	1
Saratoga Avenue/North-South Road	1-Health Service	2-Water	1
Geiger Road/Fort Weaver Road	None	1-Sewer	0
II. Fort Weaver Road to Aloha Stadium			
Farrington Highway/Kamehameha Highway	1-Educational Service	None	0
III. Aloha Stadium to Middle Street			
Salt Lake Boulevard	None	1-Refuse 1-Water 1-Sewer 1-Telephone	1
Mauka of the Airport Viaduct	None	1-Refuse	1
Makai of the Airport Viaduct	1-Social/Charitable	None	2
Aolele Street	1-Social/Charitable	None	2
IV. Middle Street to Iwilei			
North King Street	1-Educational Service 2-Religious Institutions	None	0
Dillingham Boulevard	1-Health Services 1-Educational Service 2-Religious Institutions	1-Electric 1-Telephone	0
V. Iwilei to UH Mānoa			
Beretania Street/South King Street	1-Police Station 2-Educational Services	1-Electric	0
Hotel Street/Kawaiahaʻo Street/Kapiʻolani Boulevard	1-Community Facility 1-Educational Service	1-Electric 1-Gas	2
King Street/Waimanu Street/Kapiʻolani Boulevard	1-Community Facility 1-Educational Service	1-Electric 1-Gas	0
Nimitz Hwy./Queen St./Kapiʻolani Blvd.	1-Educational Service	1-Electric	0
Nimitz Hwy/Halekauwila St./Kapiʻolani Blvd.	1-Educational Service	2-Electric 1-Sewer	1
Waikīkī Branch	None	None	1

Notes: [1]Includes educational services (schools and universities), police and fire station, religious institutions, and community facilities
[2]Includes refuse, water, sewer, electric, gas and telephone services

Construction Impacts

Alternative 2: TSM Alternative

Construction of bus enhancement facilities may potentially require temporary relocation or removal of transit facilities/stops or temporary rerouting of transit routes. However, access to these facilities would be maintained and disruption minimized, resulting in minimal impacts to emergency services and community facilities.

Alternatives 3 and 4

With these alternatives, construction activity through the corridor could temporarily impact schools, libraries and cultural sites due to congestion, noise, air pollution, and hindered access. Construction impacts would hinder access to public services and could necessitate rerouting some emergency response vehicles. Some streets would also be partially or fully closed during certain phases of construction, hindering access to facilities. Traffic rerouting or delays during construction could affect fire, police, and emergency medical service vehicles. Some cross streets could also be temporarily closed in order to complete construction work. In some cases, construction that requires temporary road closures would be conducted at night or during off-peak hours to minimize traffic impacts. Construction of at-grade and elevated HOV or guideway sections in high-volume traffic and pedestrian areas could require additional police support services to direct and control traffic and pedestrian movements. Traffic rerouting or delays would affect school bus routes and solid waste collection schedules. Access to community facilities near construction sites could also be impeded by displacement of parking or loading areas, and road closures for project construction and utility relocation.

Parks and Recreational Facilities

Long-Term Impacts

Alternative 2: TSM Alternative

The limited transportation improvements and enhanced bus system proposed as part of the TSM Alternative would have little effect on roadway traffic operations within the study corridor. The proposed improvements would have a minimal effect on the operating environment for parks and recreational resources. The improvements would have a more noticeable effect on park facilities by increasing accessibility.

Alternative 3: Managed Lane Alternative

The Managed Lane Alternative would affect one public park (Waiawa District Park) and one recreational facility (Aloha Stadium). (See Table 5-6). The proposed project improvements are anticipated to require additional right-of-way at the Waiawa District Park and Aloha Stadium, but these resources are not anticipated to require relocation. Access to the facilities would be maintained. Parking may be permanently acquired at the Aloha Stadium. The Navy-Marine Golf Course would also be impacted by the

proposed project through partial acquisition; but this facility is not considered to be a public resource.

Alternative 4: Fixed Guideway Alternative

With this alternative, long-term impacts could involve either the project's physical placement on or adjacent to a park or recreational facility, or a change in a park or recreational facility's operating environment or recreational use. The number of parcels supporting these facilities that would be directly affected by physical placement is shown in Table 5-6, which is organized by section with the number of affected parcels listed for each alignment option. The parks and recreational facilities that would experience direct effects from partial acquisition are Kawaiaha'o Mini Park, Irwin Memorial Park, Fern Community Park, Ke'ehi Lagoon Park, and Aloha Stadium. The Fixed Guideway Alternative is anticipated to require additional right-of-way at these parks and recreational resources, but none of these resources are anticipated to require permanent relocation. Other parks and recreational areas may be indirectly impacted due to their proximity to the guideway

Overall, the Fixed Guideway Alternative would increase mobility and accessibility within the project corridor. However, it could limit or impede local access to specific public parks or recreational facilities where right-of-way acquisitions would alter access or parking. Impacts could be adverse if activities, features, or attributes are impeded or altered.

Construction Impacts

During construction, temporary road closures and detours would affect traffic flow in and around park facilities.

Utilities

Long-Term Impacts

Alternatives 2 and 3

Construction of bus enhancement facilities could require relocation of utilities. Where possible, utilities would be relocated underground. The relocation of utilities may result in brief gaps in service during construction, but it is expected that the relocated utilities' capacity and continued service will be maintained. No long-term impacts to utilities are anticipated. Replacement and relocation work performed during construction may provide a longer life span and better connectivity for utilities.

Alternative 4: Fixed Guideway

Impacts to utilities would be similar to those discussed for Alternative 2, but Alternative 4 would also result in relocating utility substations or plants in order to accommodate its additional right-of-way needs. The water conveyance system may also require rerouting. The following are major utility impacts expected to result from Alternative 4 (see Table 5-6):

- Sections I and II: no utility substations are anticipated to be affected by any of the alignments.
- Section III: three utility substations (the Hālawa Pumpstation, Hawaiian Telecom office and equipment buildings, and Keʻehi Refuse Transfer Station) by the Salt Lake Boulevard alignment and one utility substation (the Keʻehi Refuse Transfer Station) by the Mauka of Airport Viaduct alignment are expected to be affected.
- Section IV: The Dillingham Boulevard alignment would potentially affect two utility substations (the Sprint PCS Center and HECO substation).
- Section V: one HECO electrical substation (located at Kaʻaahi Street and Dillingham Boulevard) by Beretania Street/South King Street; one Gas Company natural gas facility (at Hopaka Street and Kona Street) by the Hotel Street/Waimanu and Hotel Street/Kawaiahaʻo Street/Kapiʻolani Street alignments; one HECO electrical substation (at River Street and Nimitz Highway) by the Nimitz Highway/Queen Street and Nimitz Highway/ HalekauwilaStreet/Kapiʻolani Street alignments; one HECO generating station by the Nimitz Highway/Halekauwila Street/Kapiʻolani Boulevard alignment.

Construction Impacts

Utility relocations would be necessary for all alternatives except the No Build, where existing lines conflict with proposed project facilities. Utility relocations would be among the earliest activities to be performed during the construction phase and would involve localized excavation to ʻenable relocation and replacement of existing utility lines. During construction, the relocation of utilities may result in brief gaps in service.

Non-Motorized Transportation

Long-Term Impacts

Alternative 2: Transportation System Management

Construction of bus enhancement facilities could require minor relocation or realignment of bicycle or pedestrian facilities. However, construction of bus enhancement facilities would improve intermodal connections between pedestrian, bicycle, and bus facilities and would benefit all modes. This alternative would provide additional bike racks near bus stations as appropriate. Full pedestrian access would be provided to transit centers and curbside stops, in conformance with the Americans with Disabilities Act (ADA) as appropriate to this alternative.

Alternative 3: Managed Lane

The Managed Lane Alternative would include construction of a two-lane, grade separated facility and would have minimal impacts on the safety and convenience of pedestrian and bicycle facilities. However, the physical structures or right-of-way acquisition required to accommodate the Manage Lane Alternative could cause some adjustment of existing bike routes.

This alternative could improve intermodal connections between pedestrian, bicycle, and bus facilities, which would benefit all modes. For example, new bus stations could

include bicycle storage facilities. Full pedestrian access would also be provided to transit centers and curbside stops, in conformance with the Americans with Disabilities Act (ADA) as appropriate to this alternative.

Alternative 4: Fixed Guideway

Most of the alignments being considered within the five study corridor sections would be fully grade separated and would have minimal impacts on the safety and convenience of bicycle and pedestrian facilities. This alternative could require relocation or realignment of bicycle and pedestrian facilities. This would occur wherever the guideway system's structural or at-grade components would need to be located within an existing bicycle or pedestrian facility, or where an existing street would need to be widened.

This alternative could improve intermodal connections between pedestrian, bicycle, and bus facilities, which would benefit all modes. For example, new buses acquired as part of this alternative would include bike racks. Various operational policies for allowing bicycles on trains could be considered. New transit stations could include bicycle storage facilities. Full pedestrian access would also be provided to transit stations, in conformance with the Americans with Disabilities Act (ADA) as appropriate to this alternative.

This alternative would work in concert with bicycle and pedestrian networks to improve overall mobility in the region. Several portions of the proposed alignments are located on or near existing bicycle and pedestrian facilities. For example, certain alignments under consideration for Sections I, II and III are near the Fort Weaver Road, Pearl Harbor, and Nimitz bike paths, all of which fall largely under the shared use path category of bicycle facilities. This proximity would facilitate transit users' access to recreational bicycling/walking paths and would 'enable combined transit-bicycle-walk commute options, among other possibilities.

Construction Impacts

All alternatives except the No Build would have construction impacts. During construction, traffic on pedestrian and bicycle facilities would experience temporary delays. Relocation and detours of bicycle and pedestrian routes, including sidewalks, pedestrian subways and bridges, would be necessary where existing routes and facilities would conflict with the proposed project alignments.

The TSM Alternative is anticipated to have the least construction impacts because it has the smallest footprint. Similarly, the Managed Lane Alternative would have fewer impacts than the Fixed Guideway Alternative because of its limited length and location within an existing transportation corridor.

Relocation and Displacements

Long-Term Impacts

The proposed project has been designed to minimize the number of parcels that would need to be either fully or partially acquired. For fully acquired parcels, the City and

County of Honolulu would need to purchase all of the land and buildings on the parcel. With partial acquisition, a small portion of the land would need to be acquired and most of the land and the existing building(s) would remain. Portions of parcels may also need to be acquired for temporary use during the construction period (e.g., for access to buried utilities that need to be relocated). Table 5-7 lists the property acquisition requirements for each alternative.

Alternative 2: Transportation System Management

Alternative 2 would include a hub-and-spoke route bus system network. Priority would be given to buses, and services would be expanded with an increase in the fleet size to meet the proposed project's purpose and need. Two transit centers would be constructed at Pearl City and at 'Aiea. Construction of these transit centers would potentially require property acquisition. At this stage of the project design, it is unknown whether some parcels must be acquired in entirety or if only portions of some parcels would need to be acquired. Overall, property acquisition would be smaller relative to Alternatives 3 or 4.

Alternative 3: Managed Lane

The parcels that would be affected by Alternative 3 would vary according to the option selected.

Two-Directional Option

The Two-Directional Option would require acquisition of up to 49 parcels. This analysis assumes the worst-case scenario, assuming that right-of-way acquisition would include entire parcels. Of the 49 parcels anticipated to be affected, two include residential uses and 30 include commercial or industrial uses. One full acquisition of a commercial or industrial use would occur. This option is anticipated to acquire approximately 13 acres of additional land.

Reversible Option

The Reversible Option would require acquisition of approximately 44 parcels. Two include residential uses and 29 have commercial/office or industrial uses. Most of these would be partial acquisitions, but one full commercial or industrial use parcel would be acquired. It is anticipated that this option would acquire approximately 13 acres of additional land.

Alternative 4: Fixed Guideway

The parcels that would be affected by Alternative 4 would vary according to the alignment selected within each section.

Table 5-7. Property Acquisitions

Alternative	Parcels of all Types[1,2]	Residential Parcels[3]		Commercial/ Industrial Parcels[3]	
		Full	Partial	Full	Partial
Alternative 3: Managed Lane Alternative (by section)					
3a. Two-Direction Option					
Waiawa IC to Hālawa Stream	11	0	2	0	4
Hālawa Stream to Pacific St.	38	0	0	1	25
TOTAL	**49**	**0**	**2**	**1**	**29**
3b. Reversible Option					
Waiawa IC to Hālawa Stream	9	0	2	0	3
Hālawa Stream to Pacific St.	35	0	0	1	25
TOTAL	**44**	**0**	**2**	**1**	**28**
Alternative 4: Fixed Guideway Alternative (by section)					
I. Kapolei to Fort Weaver Road					
Kamokila Blvd./Farrington Hwy.	22	0	0	0	3
Kapolei Pwy./North-South Rd.	19	0	0	0	0
Saratoga Ave./North-South Rd.	35	0	0	0	0
Geiger Rd./Fort Weaver Rd.	28	0	0	0	4
II. Fort Weaver Road to Aloha Stadium					
Farrington Hwy./Kamehameha Hwy.	14	2	0	2	2
III. Aloha Stadium to Middle Street					
Salt Lake Blvd.	24	0	1	0	12
Mauka of the Airport Viaduct	33	0	0	3	17
Makai of the Airport Viaduct	49	0	0	0	37
Aolele St.	15	0	0	0	1
IV. Middle Street to Iwilei					
North King St.	37	0	2	11	6
Dillingham Blvd.	39	0	1	5	22
V. Iwilei to UH Mānoa					
Beretania St./South King St.	36	0	3	5	17
Hotel St./Waimanu St./Kapiʻolani Blvd.	65	5	4	6	36
Hotel St./Kawaiahaʻo St./Kapiʻolani Blvd.	83	7	4	28	30
King St./Waimanu St./Kapiʻolani Blvd	36	5	4	17	45
Nimitz Hwy./Queen St. /Kapiʻolani Blvd.	63	5	3	15	32
Nimitz Hwy./Halekauwila St./Kapiʻolani Blvd.	77	5	4	17	34
Waikīkī Branch	16	0	1	0	10

[1]The amounts in *Parcels of All Types* is greater than the sum of the other columns, because it also includes parcels with governmental or utility company ownership that are not currently transportation right-of-way

[2]Includes residential, commercial, vacant, and utility land uses

[3]Residential and commercial/industrial parcels do not include vacant, government-owned parcels to be subdivided in master plans, or parcels to be dedicated to the City by the developer

Section I – Kapolei to Fort Weaver Road
This portion of the corridor would affect up to 35 adjacent parcels. None would require full acquisition. The Saratoga Avenue/North-South Road alignment would affect the most parcels, but many parcels that would be affected are currently unoccupied or vacant and planned for redevelopment as part of the Hawai'i Community Development Authority's Kalaeloa Master Plan. The Kapolei Parkway/North-South Road alignment would affect the fewest number of parcels.

Section II – Fort Weaver Road to Aloha Stadium
Fourteen parcels would be affected along this portion of the corridor. Four parcels would be acquired in full and may include building displacements of two commercial and two residential uses. Two commercial-use parcels would also require partial acquisition.

Section III – Aloha Stadium to Ke'ehi Interchange
Up to 49 parcels would be affected along this portion of the corridor. The greatest number of affected parcels would occur along the Makai of the Airport Viaduct alignment, and the fewest affected parcels would occur along the Aolele Street alignment. Although, the Makai of Airport Viaduct alignment would affect the most parcels, it consists mostly of parcel acquisitions that have commercial or industrial uses. The Mauka of the Airport Alignment would potentially acquire three commercial-use parcels in full, which could include building displacements. This portion of the project route also consists primarily of commercial/office uses and military uses. Section III is the only portion of the proposed project route where an appreciable loss of military property could occur.

Section IV – Ke'ehi Interchange to Iwilei
Up to 39 parcels would be affected along this portion of the corridor. The Dillingham Boulevard alignment would affect the most parcels as a result of widening to accommodate the fixed guideway structure. Most of these parcels would involve partial acquisitions of commercial properties. The North King Street alignment would affect fewer parcels than the Dillingham Boulevard alignment, but as many as 11 of these parcels would be acquired in full and could include building displacements.

Section V – Iwilei to UH Mānoa
Up to 83 parcels would be affected along this portion of the corridor, with the greatest impacts occurring along the King Street/Kawaiaha'o Street/Kapi'olani Boulevard alignment. This alignment would also have the greatest number of full acquisitions with residential (5 parcels) and commercial (28 parcels) uses, and could include building displacements. The Beretania Street/South King Street alignment would affect the fewest parcels: 3 residential and 17 commercial parcels. Five of the commercial properties would be full acquisitions, which could include building displacements.

The Waikīkī Branch would affect up to 16 parcels, none of which are full acquisitions. Since most of the parcels along this section support non-residential uses, acquisitions are anticipated to result in impacts to commercial/office properties.

Where residential land uses may be directly affected by right-of-way acquisition, it is assumed that single-family or multi-family residential buildings could be present on these parcels. It has been noted that several affected parcels have condominium or apartment use, where multiple dwelling units would occur. Where commercial or industrial land uses may be directly affected by right-of-way acquisition, it is assumed that commercial, office, or industrial businesses could be present on these parcels. Acquisition and conversion of these parcels would result in a reduction of these residential or business buildings in the area. Because partial acquisition may affect only a portion of an individual parcel area, it is assumed that loss of residences or businesses would not be associated with these parcels.

Where residential or commercial buildings remain, the Fixed Guideway Alternative may encroach upon existing structures. This could expose residents or employees to additional noise and dust during construction, and perhaps longer-term impacts associated with noise and/or additional air pollutants, due to close proximity to the project route. These issues are addressed further in the Noise and Air Quality Technical Reports for this proposed project.

Construction Impacts

Alternative 2: Transportation System Management

For Alternative 2, it is anticipated that construction impacts would be localized to the transit center sites and that additional sites would not be required for use as construction staging or storage areas. Construction activities for Alternative 2 are anticipated to last approximately one to two years.

Alternatives 3 and 4

It is anticipated that these alternatives would require acquisition of additional right-of-way for construction staging areas. To the extent possible, staging areas would be located to prevent potential residential or business displacements. Therefore, substantial displacements or relocations are not expected to occur as a result of construction activities. Partial acquisition may affect only a portion of an individual parcel and may not result in a loss of residences or businesses associated with these parcels. Where residential or commercial buildings remain, Alternatives 3 and 4 may encroach upon existing structures, exposing residents or employees to additional noise and dust during construction.

Community Cohesion

Long-Term Impacts

Community cohesion relates to the "sense of belonging" or level of attachment that residents have to their neighborhood, neighbors, groups, or establishments, usually as a result of interactivity or perceived association. Dramatic changes in community character can cause weakness in neighborhood cohesion. Changes to general physical character or connectivity within a neighborhood can also affect cohesiveness. The effect

of project-related impacts may vary depending on a particular neighborhood's existing cohesiveness.

Alternative 2: TSM Alternative

The TSM Alternative would not offer the same capacity enhancements as Alternatives 3 and 4. However, the enhanced bus system would benefit communities and transit-dependent populations by providing mobility options similar to the other two alternatives. Access to community facilities would improve as a result of decreased congestion and improved transit services. Improved transit services would also result in improved intermodal connections and facilities, such as connections to trails and buses with bike racks. Additional buses on the road may affect emergency response times, and new routes may require the relocation and/or realignment of bicycle and pedestrian facilities. Construction of the two transit centers may require acquisition of additional property, but impacts to communities would be localized.

The following factors indicate that community cohesion would not be negatively impacted by the TSM Alternative:

- No new structures would be built in most communities, so no new barriers would be placed that would limit community connectivity.
- Connectivity within and between communities via public transportation would be increased.
- No community facilities would be directly impacted.
- More localized bus routes and an increased use of these routes may promote cohesiveness through greater interaction within a community, and by certain routes becoming identified with specific communities.

Alternative 3: Managed Lane Alternative

The Managed Lane Alternative would support growth in the PUC and improve mobility and access along the project corridor. However, this alternative would have a limited ability to improve regional accessibility for transit-dependent populations. Acquisitions along the project corridor may influence development or redevelopment by attracting new businesses, and may affect population and employment within the local area. This is not anticipated to result in long-term impacts to service or capacity. This alternative is anticipated to result in improved intermodal connections and facilities.

The Managed Lane Alternative would provide additional vehicular through capacity in an existing transportation corridor. It is not expected to have a substantial additional impact on the overall population or demographic characteristics in adjacent census tract areas, because these areas are already separated by a four-lane or wider highway. Long-term impacts are anticipated to be localized to communities adjacent to the project corridor. Communities most likely to be affected include Pearl City and ʻAiea, along Kamehameha Highway and Kalihi along Nimitz Highway. In other areas the alignment is along larger transportation right-of-ways and does not separate residents from shopping and recreational sites. As mentioned previously, in Pearl City, ʻAiea, and Kalihi the structure would lie between residents and some shopping and recreational

resources within the same community. For example, residents on the makai side of Nimitz Highway in Kalihi would have to cross over the existing at-grade Nimitz Highway and the new elevated managed lane structure to reach Pu'uhale Elementary School. Similarly, residents of 'Aiea would have to cross the existing at-grade Kamehameha Highway and the new elevated managed lane structure to reach recreational opportunities such as 'Aiea Bay Recreation area and Neal Blaisdell Park, or shopping centers such as Pearl Kai Center. Community cohesion is already hindered by the presence of at-grade highways (Kamehameha and Nimitz) and would be further affected by a new elevated structure. Although not a direct impediment to connectivity at ground surface, the elevated structure would create a perceived divide and could further splinter these communities.

The effects of the Two-Direction and Reversible options would be similar.

Alternative 4: Fixed Guideway Alternative

The Fixed Guideway Alternative would support growth throughout the study corridor and provide substantial improvements to regional mobility. Improvements in intermodal connections and facilities would support and facilitate bicycle and pedestrian networks, also improving regional mobility. The Fixed Guideway Alternative would increase mobility and accessibility to community services and facilities by reducing congestion. The introduction of a fixed guideway transit system could both increase and decrease access through neighborhoods. Access to community services and businesses could be enhanced around stations.

The Fixed Guideway Alternative may cause redevelopment within the project corridor, which could influence housing and business decisions within the study corridor. Acquisitions and transit-oriented development would influence where housing and employment are clustered within the project corridor and could affect existing community character, connectivity, and cohesion. Redevelopment could result in new housing and job opportunities and changes in economic conditions, which might make it difficult for certain community facility to remain viable.

Experience in other cities with fixed guideway transit systems has shown that under appropriate market and regulatory conditions, a fixed guideway system can stimulate greater incentive for investment by property owners, especially near transit stations. Transit-oriented development is pedestrian-friendly, and concentrations of pedestrian-oriented businesses and services can increase social interaction within communities. Faster, more reliable and more frequent transit service can also increase access to community facilities and employment opportunities, benefiting all communities along the route.

With this alternative, overall adverse effects on community cohesion and social interaction would be low. This is because most of the proposed improvements would occur in existing major transportation corridors that already act as physical barriers between neighborhoods.

The Fixed Guideway Alternative would have both positive and negative effects on community cohesion. Positive effects would include:

- Support of growth throughout the study corridor and providing substantial improvements in regional mobility.
- Improvements in mobility within the community and between communities by reducing congestion. This would increase residents' ability to reach and use community services and stay involved in their communities.
- Improvements in intermodal connections, which would encourage more bicycle and pedestrian movements, create opportunities for greater community interaction, and improve regional mobility.
- More localized bus routes would be created, and an increased use of these routes may promote cohesiveness through greater interaction within a community and by certain routes becoming identified with specific communities.
- The placement and design of stations and transit-oriented development can create a sense of place and community identity, if it considers community input and needs.

Negative impacts to community cohesion could include:

- For the Fixed Guideway Alternative, the elevated structure creates a perceived divide and could further splinter communities. This impact would be greater for the Fixed Guideway Alternative than the Managed Lane Alternative, because the alignments are on relatively smaller streets, especially in Sections IV and V.
- By promoting development and redevelopment, the Fixed Guideway Alternative could bring an accelerated rate of change to communities. Change could include an influx of new residents or new visitors for new shopping or recreational opportunities generated by transit-oriented development.
- Relocations and displacements may change a community's structure and its range of jobs, facilities, and residents. However, the number and type of relocations is not believed to be sufficient to reshape any of the communities.

Overall, the negative impacts are likely to be greatest in communities that have the greatest opportunity for further development or redevelopment (Kapolei, ʻEwa, and Kākāʻāko). Impacts would also be greatest in communities where the alignment would run along roads that would separate residents from other residents or services (Waipahu, Pearl City, ʻAiea, Salt Lake, Kalihi, and all of Section V).

Construction Impacts

Alternative 2: TSM Alternative

Construction impacts would be minor and related to temporary road, sidewalk, or bikeway closures and rerouting or relocating pedestrian walkways and/or bikeways in a relatively small area around the two new transit centers. Access to community facilities may be temporarily rerouted or periodically closed. No additional construction staging areas would be needed. Utility relocations would have a minor effect on capacity and service disruptions. These impacts would have a temporary, short-term affect on

community character and connectivity but are not anticipated to affect long-term community decisions or interactions.

Alternative 3: Managed Lane Alternative

Construction impacts would be similar to those discussed for the TSM Alternative, except broader due to the greater sphere of influence. The Managed Lane Alternative would also require temporary staging areas, which would have additional impacts on access, mobility, and community character. This alternative would require relocating and rerouting community utilities and facilities. New residents and visitors may result from the influx of construction workers, which may temporarily influence housing and the regional economy.

Alternative 4: Fixed Guideway Alternative

Construction impacts would be similar to those discussed for Alternatives 2 and 3, except impacts would be spread across a longer corridor and would affect a greater number of communities. During construction, temporary physical barriers to isolate construction sites from traffic lanes would likely restrict access across roadways. Some streets would also be partially or fully closed during certain phases of construction, hindering access and temporarily reducing community cohesion within neighborhoods. New residents and visitors may result from the influx of construction workers, which may temporarily influence housing and the regional economy.

Chapter 6 Mitigation

The information presented in this report and the additional investigations to be conducted for this project can help determine appropriate avoidance/mitigation measures for potential impacts. This information can also be used to identify and address community concerns and protect community health and safety during project construction and operation. The general mitigation measures discussed in this chapter emphasize planning, design, and engineering to avoid or minimize impacts to neighborhoods and communities.

With the No Build Alternative, projects included under the ORTP would develop mitigation as part of their individual project development process. The No Build Alternative would not include new construction other than what has already been programmed, so no mitigation is proposed.

Population, Demographics, Housing, and Employment

Mitigation for potential project-related impacts that could affect population displacement is discussed in the *Relocation and Displacements* section of this report and the Land Use Technical Report prepared for the proposed project.

Alternative 2: Transportation Management Systems

The TSM Alternative is not anticipated to negatively influence housing or employment conditions in the project area. No mitigation would be needed.

Alternatives 3 and 4

Temporary construction-related jobs would be expected to increase local employment opportunities and decrease unemployment levels, but may temporarily increase the demand for materials and housing. These impacts could be mitigated as follows:

- Provide assistance in locating housing or build sufficient temporary or permanent housing for construction workers.
- Provide quotas for local hires.
- Include special job training that could help local construction workers become more skilled in developing transit systems.

Environmental Justice

Alternative 2: Transportation Systems Management

Construction of bus enhancement facilities could affect low-income and/or minority communities if these facilities are located in or adjacent to those communities. Temporary impacts such as noise or dust from construction activities and traffic impacts during construction could be mitigated as follows:

- Using Best Management Practices (BMPs) such as construction scheduling or dust control measures
- Implementing Traffic Management Plans

Alternative 3: Managed Lane and Alternative 4: Fixed Guideways

Redevelopment could potentially displace businesses or residents, and increased rents or leases could force disadvantaged populations out of the area. Measures to mitigate these impacts could include:

- Community coordination and outreach plans that identify how to reach low-income or minority communities and address their concerns.
- Ensure that low-income and minority communities have enhanced or maintained services to and from transit services.
- Provide credits to low-income commuters, which they could use either for transit service or toll payments.
- Implement planning goals and strategies that analyze and address the needs of transit-dependent low-income and minority users.
- Require residential redevelopment or new development to meet affordable housing requirements.

The following measures could be implemented during planning and operation of the proposed project to ensure continual public outreach to low-income and minority communities:

- Provide opportunities for public outreach to or feedback from these communities during the proposed project's planning, construction, and operational phases.
- Provide multilingual publications and signage for communities that have identified language barriers.
- Have interpreters available upon request.
- Conduct public outreach activities at shelters or social services.
- Provide notices in TheBus publications that describe the proposed project's effects on transit services.

Construction of transit improvements could affect low-income and/or minority communities if these facilities are located in or adjacent to those communities. Construction impacts would include temporary road, sidewalk, or bikeway closures and rerouting or relocating pedestrian walkways and/or bikeways. Access to community facilities may be temporarily rerouted or periodically closed. Additional construction staging areas would be needed. Utility relocations would have a minor affect on capacity and service disruptions. Implementation of the following BMPs could reduce the effects of these impacts.

- Construction scheduling;
- Implementation of Traffic Management Plans;
- Coordination plans with government agencies;
- Regular community construction updates; and

- Temporary construction easements for properties adjacent to the proposed alignment.

Public Services and Facilities

Alternative 2: TSM

The TSM Alternative would not directly impact public services and facilities. However, the increased number of buses on roadways could hinder the travel of emergency service vehicles. Mitigation for this type of impact could include emergency operations planning and development of alternate access routes. No additional mitigation would be necessary.

Alternative 3: Managed Lane and Alternative 4: Fixed Guideways

The Fixed Guideway Alternative could result in long-term impacts to community facilities through direct acquisition of a facility, partial land acquisition that places the guideway structure next to a community facility, or by changing a facility's operating environment. Mitigation efforts to reduce these impacts could include:

- Coordination during the planning, construction, and operational phases to ensure full functionality of emergency and community services
- Equal or over-compensation for land ceded to the project by right-of-way acquisition.
- Relocation or rearrangement of certain facilities, landscaping and visual screening, and other efforts deemed necessary to maintain full functionality.
- Employment of police or crossing guard support, to direct and control traffic and pedestrian movements for construction in high-volume traffic and pedestrian areas.
- Noise, dust, and stormwater BMPs to protect public health and safety during construction activities.
- Road closures to be conducted at night or during off-peak hours.
- Providing alternate access points where project placement restricts existing vehicular or pedestrian access routes to public service buildings.
- During the detailed design phase, development and description of alternate access routes and notification of public and emergency services, to ease circulation in and out of facilities.

Parks and Recreation Resources

Alternative 2: TSM

The TSM Alternative would not impact parks or recreational facilities; so no mitigation would be needed.

Alternative 3: Managed Lane and Alternative 4: Fixed Guideways

Alternatives 3 and 4 could result in long-term impacts to parks or recreation facilities through direct acquisition of a facility, partial land acquisition that places the guideway structure next to a community facility, or by changing the facility's operating environment. To reduce impacts to these facilities, mitigation efforts would be similar to those proposed for Alternative 3 in the previous *Public Services and Facilities* section.

Utilities

To mitigate potential disruptions in service and conflicts with buried utilities, and to coordinate utility improvements and relocations, the following measures should be considered and implemented where appropriate.

- During preliminary engineering coordination with utility providers should occur to identify potential challenges and provide opportunities for resolution prior to construction.
- Replacement and/or relocation of utilities should be closely coordinated with roadway, guideway, and station construction activities to minimize disruption to adjacent properties and traffic.
- Affected properties should be notified prior to temporary service disruptions.
- To the maximum extent feasible, relocated utilities should be buried together or coordinated with infrastructure improvements already planned by the City and County of Honolulu or other agencies.
- Coordination of utility relocations should be scheduled, programmed, and monitored as a part of the Construction Management Plan and the Public Participation Program.

Non-Motorized Transportation

Existing bicycle or pedestrian facilities may need to be relocated or realigned. Relocations and/or realignments should be designed to maintain the pedestrian and cycling network's safety and convenience. This network's safety and convenience is affected by a range of integrated factors, including but not limited to:

- Network connectivity
- Air quality and noise levels experienced by cyclists and pedestrians
- Pavement conditions
- Shared travel lane, shoulder, bike lane, or bike/pedestrian path width
- Motor vehicle traffic proximity/interaction, fleet mix, and density
- Clarity of facility designation through signage, right-of-way delineation, or grade separation
- Incorporating secure bike parking and rental bikes at Park-and-Ride lots, expanding access to transit stops for non-motorists, and providing additional network connectivity.

During construction, the following measures should be considered and implemented where appropriate.

- Affected bicycle and pedestrian routes (including sidewalks, pedestrian subways and bridges) should be relocated and detoured to maintain the pedestrian and cycling network's safety and convenience.
- Detours and temporary lane closures and/or rerouting should be developed as part of the Traffic Management Plan prior to the construction phase.

Relocation and Displacements

To mitigate relocation and displacement impacts, relocation assistance would be provided to businesses and residents directly affected by the proposed project's right-of-way requirements. This assistance would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (23 CFR Part 740, 49 CFR Part 24, 42 U.S.C. 4601, et seq.) as amended, and Hawai'i Revised Statutes (HRS) Chapter 111, Assistance to Displaced Persons.

Under state and federal laws, no person would be required to move unless comparable replacement property is available within that person's financial means. Relocation services would be provided by qualified personnel and may include the following:

- Determine any special needs and/or requirements;
- Explain relocation benefits;
- Provide individual assistance;
- Assure that comparable property is available in advance of displacement;
- Provide referrals to comparable properties;
- Provide the amount of the maximum replacement entitlement in writing before the required vacate date;
- Inspect replacement property for decent, safe, and sanitary conditions;
- Provide information on other federal, state, or local programs offering assistance to displaced persons; and/or
- Provide counseling to minimize hardships associated with relocation.

Comparable replacement housing should be functionally similar to the present dwelling. It must meet all minimum requirements established by state regulations and must conform to applicable housing and occupancy codes. Replacement housing should have the following attributes:

- Adequate in size to accommodate the displaced person(s);
- Provide a similar number of rooms and living space;
- Located in an area not subject to unreasonable adverse environmental conditions;
- No less desirable than the present dwelling with respect to public utilities and commercial and public facilities;
- Located on a site that is of a suitable size for the dwelling, with normal site improvements;
- Currently available to the affected property owner and within his/her financial means; and
- Within reasonable access to the displaced person's place of employment.

If replacement housing is not available that is within a resident's financial ability, alternative solutions (generally referred to as "housing of last resort") may be used. Solutions could include:

- Purchase housing for displaced individuals and rent or sell the housing to displaced individuals at a price within their financial means;

- Renovate existing housing;
- Provide financing for homeowners with low incomes and/or poor credit histories; or
- Partner with public or private agencies that provide housing for low-income individuals.

State and federal regulations ensure that relocation resources are provided without discrimination. Businesses are provided special assistance in dealing with possible losses and helped with relocating near their previous site. Under state and federal rules and regulations, moving expenses and other types of impacts (e.g., loss of floor space for businesses) are considered and addressed. Affected businesses would be encouraged to plan moves in advance, so the actual relocation can be conducted with minimal delays and inconvenience to relocated businesses.

All state and Federal Highway Administration (FHWA) projects must comply with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601 et seq.) as amended. This Act establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a federal agency or with federal financial assistance. The primary purpose of this Act is to ensure that these persons should not suffer disproportionate injuries as a result of programs and projects designed for the benefit of the public as a whole, and to minimize the hardship of displacement on such persons. Minimizing the adverse impact of displacement is essential to maintaining the economic and social well-being of communities.

Uniform procedures for administration of relocation assistance should, to the maximum extent feasible, assure that any displaced person's unique circumstances are taken into account. Persons in essentially similar circumstances should be accorded equal treatment under this Act.

Where parcel acquisitions or temporary use cannot be avoided, relocation services would be provided. This must be in compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended [42 USC 4601 et seq. and 49 CFR Part 24] and the Hawai'i Revised Statutes (HRS) Chapter 111, Assistance to Displace Persons.

These laws and regulations provide relocation services for all property and business owners and residents without discrimination.

Community Cohesion

Alternative 2: Transportation System Management

Construction impacts would be minor and related to temporary road, sidewalk, or bikeway closures and rerouting or relocating pedestrian walkways and/or bikeways. Access to community facilities may be temporarily rerouted or periodically closed. BMPs such as construction scheduling and implementation of Traffic Management Plans could reduce the effects of these impacts.

Alternatives 3 and 4

Neighborhood connectivity and access to community facilities may be temporarily disrupted. Implementation of the following BMPs could reduce the effects of these impacts.

- Construction scheduling;
- BMPs such as construction scheduling or dust control measures;
- Implementation of Traffic Management Plans;
- Coordination plans with government agencies;
- Regular community construction updates; and
- Temporary construction easements for properties adjacent to the proposed alignment.

The following mitigation measures can be used to ensure that access within the impacted communities and community amenities are maintained:

- Transit-Oriented Development;
- Through planning and zoning, Special Design districts can 'enable project and future development to become a part of the community;
- Involve the community in the design and planning of structures or stations;
- Create a unique persona to stations and other project structures that reflect the community's personality;
- Make stations an attraction, with amenities like community or daycare centers ;
- Enhance bicycle and pedestrian access; and
- Create landscaping or other visual enhancements to soften the managed-lane structures.

In addition, for Alternative 4, using tunneling so the project could travel below grade would minimize disruption to neighborhoods.

Recommendations

The recommendations in this section were prepared based on comments and coordination with agencies and based on methodology developed specifically for Environmental Justice issues (see Appendix A).

Once a Locally Preferred Alternative is selected, a Community Impact Assessment is recommended to assess the impacts of the proposed project. This assessment should consider the community profile, evaluate short and long-term impacts, and develop avoidance or mitigation measures. The Community Impact Assessment's goal is to facilitate public involvement in the decision making process.

Environmental Justice

Census data can only provide a preliminary profile of the communities located in the project study corridor. A preliminary community profile based on census data was obtained and prepared for the Alternatives Analysis (AA). For the Draft EIS phase, a secondary assessment that refines the results of that community profile would be

conducted, using input from the project's public outreach experts, social service providers, available agency data, additional census data, and TheBus survey data.

The project's public outreach expert would be consulted to identify known communities of concern based on local knowledge and ongoing public outreach activities. Pacific Gateway Center, the immigrant service provider, could be consulted to further identify areas that may contain minority or linguistically isolated populations within the study corridor. Other community service facilities may also be contacted as needed, to refine the identification of potential communities of concern. Available agency data can include information such as reading proficiency from the Hawai'i Department of Education. Census data identifying populations likely to be transit-dependent (e.g., housing units with no cars, populations of children or senior citizens, and disabled populations) would also be used to supplement input from community services facilities and public outreach experts.

Areas with potential communities of concern would be identified using these potential sources and data gathered from the US Census Bureau, community service facilities, and field surveys. These areas would then be mapped and in consultation with the Department of Transportation Services (DTS), FTA, and FHWA, a preliminary assessment of areas with possible environmental justice impacts would be determined. This methodology is detailed in Figure 6-1.

The extent to which high and adverse impacts fall disproportionately on minority and low-income populations would be determined for each alternative. This analysis would address issues raised during the outreach program and any pertinent impacts identified in the technical analysis prepared for this project.

The final step would be to determine which high and adverse impacts (if any) are excessively disproportionate for any alternative. The determination of disproportionate impacts would generally be based on comparing impacts on the marginalized population compared to other groups within the corridor. By using this approach, the analysis will consider both positive benefits and negative effects on the areas most directly served by each alternative. Other factors that may be taken into account include design, comparative impacts, relative community benefits, and the relevant number of similar existing and planned system elements in non-minority and non-low-income areas.

Mitigation Development

DTS and FTA should be involved in any decisions on commitments or mitigation measures designed to avoid or minimize disproportionate high and adverse impacts to communities of concern beyond the project's current definition. Any mitigation measures would reflect input from the affected communities of concern and community leaders.

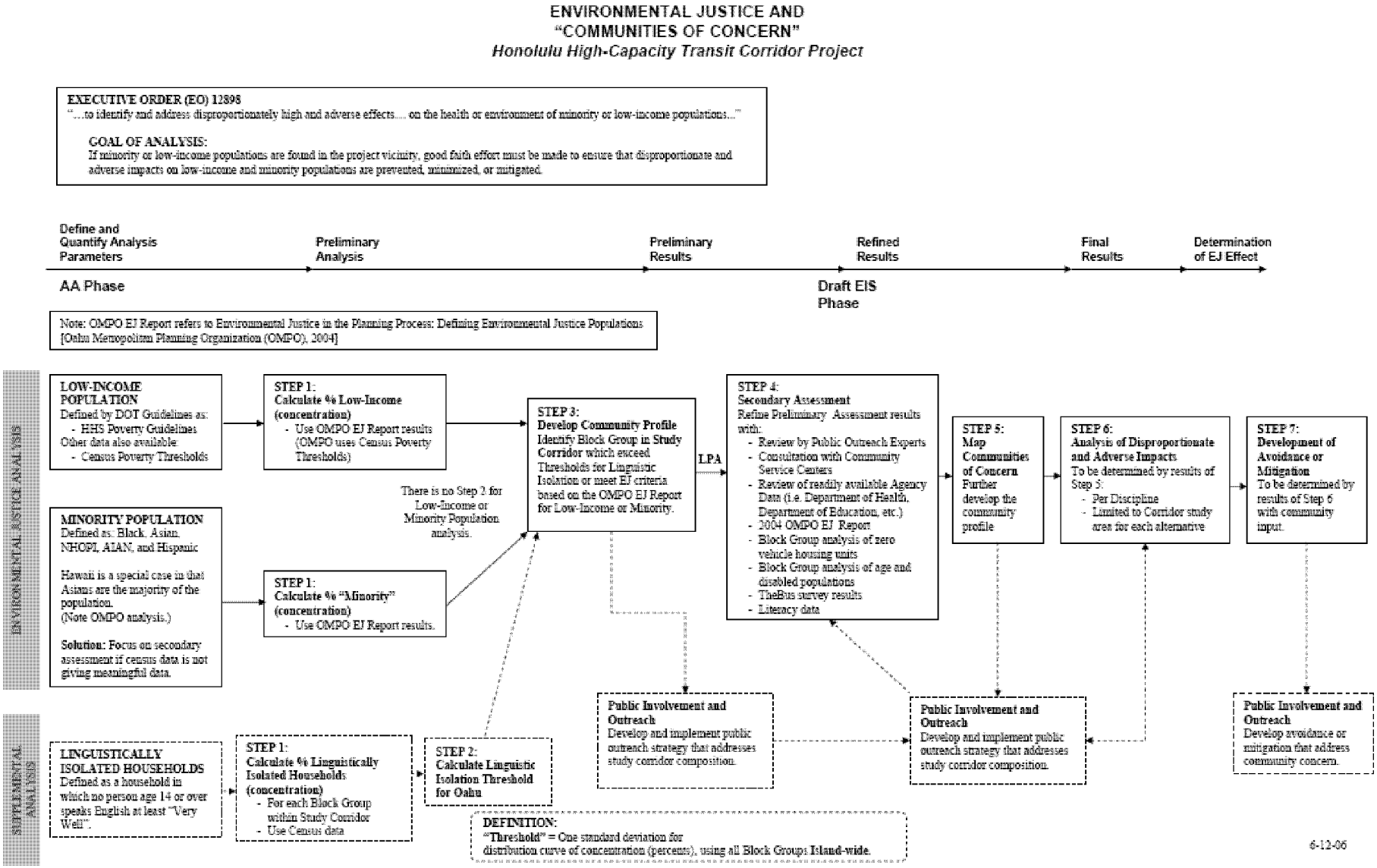

Figure 6-1. Environmental Justice Analysis

Outreach

At each stage that the community profile is developed and refined, the information obtained can be used to refocus or develop new public outreach strategies, if necessary. In this way, meaningful involvement from the public in the discussion of alternatives analysis, location of features, and/or design of the alternatives throughout the project process can be incorporated.

Public reading materials would be produced as part of the overall public involvement program. To reach populations that do not speak or read English, information on how to obtain all reading materials would be available in other languages. The materials would be made available in other languages upon request and this decision may depend on what is learned from public involvement activities and contact with community organizations, churches and other groups. Languages potentially needed include Japanese, Korean, Samoan, Tongan, Ilocano, Spanish, Vietnamese, Laotian, and Chinese. For environmental justice outreach, these flyers would also be mailed to potential environmental justice neighborhoods (in the appropriate language) and provided to churches and community service organizations, which may have access to communities of concern. More detail on public involvement activities and outreach is provided in Appendix A.

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Appendix A Public Involvement

Public Involvement Activities

A very extensive public involvement and communication outreach program was conducted in association with the Honolulu High Capacity Transit Corridor Project (HHCTCP)'s Alternatives Analysis (AA) and Environmental Impact Statement (EIS). This program has been implemented on a nearly continual basis since December 2005.

The Public Involvement Plan (PIP) was developed to ensure that citizens of O'ahu are informed about the AA/DEIS, and provided with meaningful information at regular intervals during the process, and also to request and record the public's views on key issues. The PIP defines the approach to engaging and informing the public during the environmental review process and conceptual engineering phase. As public comments are evaluated, this plan is being updated and revised to meet the needs of the project communication outreach activities (Public Involvement Plan, 2006).

Public scoping meetings were held on December 13 and 14, 2005 at two locations within the study corridor and each was attended by approximately 450 and 200 people, respectively. They were conducted in an open-house format that presented the project's purposed and need, proposed project alternatives, and the scope of analysis to be included in the AA and the Draft EIS. These meetings allowed members of the public to ask individual questions of project staff and provided an opportunity for the public to provide either written testimony or oral testimony, recorded by court reporters.

The high attendance at these meetings was a result of DTS's substantial media and community outreach efforts, which included targeted outreach to underrepresented non-English-speaking populations. The project scoping meetings were publicized through newsletter mailings, website and phone-line information, newspaper advertisements, radio advertising, distribution of informational flyers, and news service coverage. Informational flyers were distributed in ten languages t identified as being spoken by population groups within the corridor: Chinese, English, Ilocano, Japanese, Korean, Laotian, Samoan, Spanish, Tagalog, and Vietnamese. Newsletters were mailed to approximately 15,400 addresses. Radio advertising appeared on sixteen stations. Three stations catering to non-English speaking demographics carried advertising in Chinese, Ilocano, Japanese, Korean, Laotian, Samoan, Tagalog, and Vietnamese. Mayor Mufi Hannemann also appeared on the KINE radio morning program on December 13, 2005 and invited listeners to the scoping meetings.

The public scoping meetings were supplemented with an agency scoping meeting on December 13, 2005 targeted to the federal, State and County agencies potentially interested in the project. The agency scoping meeting was attended by approximately 20 agencies and utility companies.

Following closure of the public scoping process, public outreach activities continued and included meetings (also known as Speakers Bureau Engagements) with interested parties

or groups. Briefings and interviews have been and continue to be conducted with interested community leaders and public officials. The project web site, *www.honolulutransit.org*, is periodically being updated to reflect the project's current status. Additional opportunities for public participation will be announced through mailings, notices, advertisements, and press releases. Anyone wishing to be placed on the project mailing list may do so by registering on the web site at *www.honolulutransit.org* or by calling (808) 566-2299.

The intent of soliciting input from communities of concern is to encourage traditionally under-served groups to articulate issues that should be addressed before they become complaints. The intent is also to provide opportunities for meaningful involvement in the discussion of alternatives analysis, location of features, and/or design of the alternatives throughout the project.

Outreach

At each stage in the community profile development and refinement, the information obtained can be used to refocus or develop new public outreach strategies, if necessary. In this way, meaningful involvement in the discussion of alternatives analysis, location of features, and/or design of the alternatives throughout the project process can be sought from the public.

Public reading materials have been produced as part of the overall public involvement program. These materials include flyers advertising upcoming public meetings, brochures providing information about the proposed project, and other printed material, developed as necessary. Identified communities of concern would be informed about the project through public involvement activities, encouraged to attend meetings or provide input by being added to the project mailing list or encouraging a Speakers Bureau Presentation to the churches and community service organizations listed in Table A-1, which may have access to communities of concern.

To reach populations that do not speak or read English, information on obtaining all reading materials would be available in other languages. The materials would be made available in other languages upon request and this decision may depend on what is learned from public involvement activities and contact with community organizations, churches and other groups. Languages potentially needed include: Japanese, Korean, Samoan, Tongan, Ilocano, Spanish, Vietnamese, Laotian, and Chinese.

Flyers advertising public meetings and other project information would be mailed to stakeholders on the project mailing list. For environmental justice outreach, these flyers would also be mailed to potential environmental justice neighborhoods (in the appropriate language), and provided to the churches and community service organizations listed in Table A-1, which may have access to communities of concern.

Table A-1. Community Service Organizations Mailing List

Affordable Housing and Homeless Alliance	Kaumakapili Church
Aloha United Way	KNDI - 1270 AM (Micronesian)
Angel Network Charities	Korea Daily of Hawai'i
Big Brothers Big Sisters of Honolulu	Korean Presbyterian Church of Honolulu
Boys and Girls Club of Hawai'i	Lanakila Health Center
Catholic Charities Community and Immigrant Services	Legal Aid Society of Hawai'i
Catholic Charities Hawai'i	Maililand
Central Samoan Assembly of God	Mental Health kokūa
YMCA	Mo'ili'ili Community Center
Child and Family Service	Na Loio
Child and Family Services	New Hope Christian Fellowship
Chinese Lutheran Church	Nikkan Sun (newspaper)
East-West Journal	Nu'uanu Baptist Church
FIL-AM Courier	Office of Community Services
Filipino Chronicle	Office of Refugee Resettlement
Filipino Community Center, Inc.	Ohana Ola O Kahumana
First Chinese Church of Christ	Pacific American Foundation
Goodwill Industries of Hawai'i	Pacific Gateway Center
Gregory House Programs	Pālama Settlement
Hale Kipa, Inc.	Parents and Children Together
Hawai'i Chinese News	Pauahi Community Center
Hawai'i Community Foundation	Puerto Rican Association of Hawai'i United
Hawai'i Foodbank	Queen Lili'uokalani Children's Center
Hawai'i Hochi	Radio Seoul
Hawai'i Immigrant Service	River of Life Mission
Hawai'i Literacy	Safe Haven
Hawai'i Meals on Wheels, Inc.	Salvation Army Family Services
Hawai'i Pacific University	Sing Tao Daily Hawai'i Agent
Honolulu Community Action Program	Susannah Wesley Community Center
Housing and Community Development Corporation of Hawai'i	United Chinese Society
US Department of Housing and Urban Development	University Avenue Baptist Church
Homeless Solutions	Vietnamese Catholic Community
Institute for Human Services	Vietnamese Community of Hawai'i
Kahumana Residential Treatment Services	Volunteer Legal Services of Hawai'i
Kaimukī Christian Church	Wai'anae Coast Comprehensive Health Center
Kalihi Child Care Pre-school	Waikīkī Health Center
Kalihi-Pālama Health Center	Weinberg Village Waimānalo
Kalihi Union Church	Young Buddhist Association - Honolulu

Attachment A
Agency Coordination

Attachment A
Agency Coordination

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Tuesday, 28 February, 2006, 1:30p.m.	**Location:**	DTS Conference Room, 3rd Floor

Subject: Environmental Justice (EJ) coordination meeting with DTS Title VI contact for FTA

Attendees: Faith Miyamoto, James Burke, Phyllis Kurio, Ken Banao, DTS
Lawrence Spurgeon, Nami Ohtomo, PB

Summary:

- James Burke is Chief of the Public Transit Division, and also the City's designated Title VI contact for FTA.
- The purpose of the meeting is to discuss how to evaluate where "disadvantaged" groups (minority and low-income populations) exist, determine potential disproportionate and adverse impacts to them, and document consideration of EJ and Title VI concerns. EJ can be a way of helping to comply with Title VI. The overall goal is to try to avoid discriminating against anyone.
- James said that DTS must do an EJ evaluation when changing bus operations. When DTS documents EJ analysis, they follow the existing OMPO methods/data, relying on GIS and available information, and tailoring the method to fit the changes being evaluated, without having to create new data.
- James provided a copy of a report on "Environmental Justice Evaluation" for "Proposed TheBus Service Modifications (Routes E, 303, 87)" (March 2005).
- However, James noted that, if an operational change to TheBus impacts (in EJ terms) somebody, it can be changed/revised again - unlike some projects.
- James said DTS evaluates both impacts and benefits, but looks at direct impacts adjacent to a bus route, even when there is also a benefit.
- PB proposed the following evaluation method for the HHCTC project:
  1) Analyze existing census data – using block group-level analysis results already documented in OMPO's EJ study, plus tract-level detailed race analysis, including linguistic isolation data.
  2) "Refinement" of data – review of census data output by community outreach experts and knowledge gained from outreach efforts. Additional efforts would be made to conduct community outreach particularly to disadvantaged groups, and to avoid/minimize/mitigate potential impacts.
- James said the proposed additional census data analysis was a good idea.
- The project needs to consider both EJ and Title VI. Title VI has the force of law, whereas Executive Order 12898 on EJ does not. (However, the "Hastings Amendment" would require federal agencies to incorporate environmental justice into their core missions. The amendment would essentially codify the Executive Order, and establish an office of environmental justice in federal agencies.)
- James agreed to review the EJ methodology for the Transit project.

Actions Required:

1. DTS to review project's EJ methodology.
2. Need to check if the Hastings Amendment has passed. (NOTE: It appears that this "amendment", introduced in Congress as H.R.1648, is still in committee. See <http://thomas.loc.gov>)

Distribution	File: #16434A	**By:**	Nami Ohtomo
	Meeting Attendees; Veronica Chan		

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Thursday, 23 February, 2006, 1:30p.m.	**Location:**	DTS Conference Room, 3rd Floor

Subject: Environmental Justice (EJ) coordination meeting with DPP, Steve Young

Attendees: Faith Miyamoto, DTS
Steve Young, DPP
Lawrence Spurgeon, Theresa Dickerson, Allan Hodges, Hong Li, Nami Ohtomo, PB

Summary:

- PB explained that the purpose of the meeting is to discuss methods for identifying disadvantaged groups (minority and low-income populations), and determining potential disproportionate and adverse impacts to them. This meeting was requested because of Steve's knowledge about using census data to identify disadvantaged populations, particularly stemming from his input on OMPO's EJ study (2004).
- Under the proposed EJ methodology for the Transit project, the project team will 1) use Census data to identify "disadvantaged" populations (*i.e.*, minority and low-income populations); and 2) "refine" the understanding of disadvantaged populations based on input from community outreach experts and efforts. Additional efforts would be made to conduct community outreach particularly to disadvantaged groups, and to avoid/minimize/mitigate potential impacts.
- For step 1, PB is interested in analyzing census data, using a method similar to what was done for the OMPO study. However, PB asked if DPP is aware of any way to refine the data to show "detailed race" information at the block group level.
- DPP verified that analysis for detailed race is not possible at the block group level, because detailed race data does not exist at that level. Therefore, detailed race data was used in the OMPO report only at the census tract level, to determine which minorities in Hawaii are truly "minorities", based on differences in "settlement patterns" across the island. A separate section of the study then uses the federal definitions of minority at the census block group level (without detailed race information), to identify disadvantaged (minority) populations.
- PB inquired whether using a "threshold" method, would also be viable, in step 1. The threshold method would compare the detailed race percentages within each census tract, with the percentage of that race in the island, or in a Development Plan area. Even though this method would yield less precise results than the OMPO method, which accounts for the differing population size of block groups, it would identify tracts by detailed race, rather than block groups by larger race categories. Moreover, the secondary step of "refining" the census data would still be applied. Any tracts not identified by the threshold method could still be identified during the refinement, and minority tracts already identified would be verified and/or sub-communities within those tracts would be identified.
- DPP agreed that the refinement step (step 2) is a good idea, but advised using the OMPO method for step 1, in lieu of the threshold method.
- PB suggested that in order to develop the most comprehensive list of potentially disadvantaged (minority) populations; a combination of data sources could be used. 1) The results in the OMPO report, at the block group level, without detailed race information, already identifies block groups that are disadvantaged populations. 2) In addition, the OMPO method could be applied to the detailed race information at the census tract level, but ONLY for those detailed races identified on page 45 of the OMPO report as having "High" or "Average" index

values, because they represent those detailed races that are true minorities for Hawaii. According to those results, Samoan and Vietnamese have the highest indices.

- DPP agreed that a combination approach using block group and tracts would likely identify sub-populations that otherwise were not identified in the OMPO study.
- Results of the income analysis could be taken directly from the OMPO study.
- Other factors such as linguistic isolation are also only available at the census tract level.
- PB will consult with DTS to finalize the preferred approach.
- PB requested DPP's files containing data and results used in the OMPO report. DPP will provide them to PB.

Actions Required:

1. DPP to provide PB with files of data and results used in the OMPO report.
2. PB to consult with DTS to finalize the preferred approach.

Distribution File: #16434A

Meeting Attendees; Veronica Chan

By: Nami Ohtomo

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Tuesday, 28 February, 2006, 1:30p.m.	**Location:**	DTS Conference Room, 3rd Floor

Subject: Environmental Justice (EJ) coordination meeting with DTS Title VI contact for FTA

Attendees: Faith Miyamoto, James Burke, Phyllis Kurio, Ken Banao, DTS
Lawrence Spurgeon, Nami Ohtomo, PB

Summary:

- James Burke is Chief of the Public Transit Division, and also the City's designated Title VI contact for FTA.
- The purpose of the meeting is to discuss how to evaluate where "disadvantaged" groups (minority and low-income populations) exist, determine potential disproportionate and adverse impacts to them, and document consideration of EJ and Title VI concerns. EJ can be a way of helping to comply with Title VI. The overall goal is to try to avoid discriminating against anyone.
- James said that DTS must do an EJ evaluation when changing bus operations. When DTS documents EJ analysis, they follow the existing OMPO methods/data, relying on GIS and available information, and tailoring the method to fit the changes being evaluated, without having to create new data.
- James provided a copy of a report on "Environmental Justice Evaluation" for "Proposed TheBus Service Modifications (Routes E, 303, 87)" (March 2005).
- However, James noted that, if an operational change to TheBus impacts (in EJ terms) somebody, it can be changed/revised again - unlike some projects.
- James said DTS evaluates both impacts and benefits, but looks at direct impacts adjacent to a bus route, even when there is also a benefit.
- PB proposed the following evaluation method for the HHCTC project:
  1) Analyze existing census data – using block group-level analysis results already documented in OMPO's EJ study, plus tract-level detailed race analysis, including linguistic isolation data.
  2) "Refinement" of data – review of census data output by community outreach experts and knowledge gained from outreach efforts. Additional efforts would be made to conduct community outreach particularly to disadvantaged groups, and to avoid/minimize/mitigate potential impacts.
- James said the proposed additional census data analysis was a good idea.
- The project needs to consider both EJ and Title VI. Title VI has the force of law, whereas Executive Order 12898 on EJ does not. (However, the "Hastings Amendment" would require federal agencies to incorporate environmental justice into their core missions. The amendment would essentially codify the Executive Order, and establish an office of environmental justice in federal agencies.)
- James agreed to review the EJ methodology for the Transit project.

Actions Required:

1. DTS to review project's EJ methodology.
2. Need to check if the Hastings Amendment has passed. (NOTE: It appears that this "amendment", introduced in Congress as H.R.1648, is still in committee. See <http://thomas.loc.gov>)

Distribution	File: #16434A	**By:**	Nami Ohtomo
	Meeting Attendees; Veronica Chan		

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Tuesday, 28 March, 2006, 10:00a.m. (HST)	**Location:**	DTS and telephone conference

Subject: Environmental Justice (EJ) coordination meeting with FTA EJ

Attendees:
Jim Barr, Jim Ryan, Joe Ossi, Carolyn Mulvihill, FTA, Headquarters
Ray Sukys, Donna Turchie, FTA, Region 9
Faith Miyamoto, Phyllis Kurio, Ken Banao, DTS
Lawrence Spurgeon, Nami Ohtomo, Veronica Chan, PB

Summary:

- The purpose of the meeting was to discuss how to evaluate where "communities of concern" (minority and low-income populations) exist, determine potential disproportionate and adverse impacts to them, and document consideration of EJ and Title VI concerns. EJ can be a way of helping to comply with Title VI. The overall goal is to try to avoid discriminating against anyone.
- PB provided background on the project indicating that the project development process would consist of an Alternatives Analysis (AA), then a Draft EIS. Joe Ossi was concerned that scoping will have to follow AA, if the AA influences the alternatives being considered in the Draft EIS. FTA stated that, "FTA requires scoping at the conclusion of the AA and the start of the NEPA process. FTA has not yet concluded whether a new NOI will be required." DTS and PB will address this issue with FTA withfuture coordination.
- PB proposed the following evaluation method for the HHCTC project [as shown in the EJ Analysis Flow Chart (handout)]:

  1) Quantitative analysis ("preliminary assessment") using census data, followed by qualitative analysis ("secondary assessment") based on other existing sources and local knowledge.
  2) Because the goal of EJ is to analyze potential disproportionate and adverse effects, and because such effects are anticipated in the study corridor, not island-wide, the proposed methodology focuses on census tracts in the corridor. However, all census tracts island-wide would be used to develop a "background" threshold against which populations in the corridor would be compared.
  3) Analyze existing low-income populations using the Census poverty threshold which is readily available in census data. PB pointed out that the DOT Order (5610.2) defines low-income as at or below the HHS poverty guidelines and that there is a difference between the HHS poverty guidelines and the Census poverty threshold. FTA indicated that if the Census poverty threshold is to be used, it should be clearly stated and documented and that there should be concurrence among the agencies involved, including EPA. FTA was also concerned that smaller communities within census tracts could be overlooked. PB will be using a "reality check" step to account for those smaller areas that should be considered.
  4) Analyze existing minority populations using detailed race and additional analysis for linguistically isolated populations. PB indicated that the federal definition of minority does not help to locate "disadvantaged" populations, due to Hawaii's racial diversity; therefore, analysis of Census "detailed race"

categories was proposed as one option. "Detailed race" is available only at the census tract level, not for the more refined block group unit. FTA indicated that detailed race does not have to be calculated; rather, federally-defined race categories should be used at the block group level to calculate concentration of minorities. If after calculating/documenting the results of race-based data, the results do not appear to be meaningful for the local population, analysis should rely on other factors, such as income and linguistic isolation, Data should also be supplemented with other factors, such as zero car households, senior and handicapped populations, and community input. PB will focus more on linguistically isolated and low-income populations, and secondary assessment analysis to determine communities of concern. Minority (using federal definitions) and low-income will be calculated at the block group level. FTA reiterated that the proposed method should be clearly stated and documented.

- FTA indicated that the assessments should be used to develop a community profile and to determine strategies for public outreach.
- HHCTC team has been implementing and will continue to implement its public outreach program. The assessments of the EJ analysis will be fed back into refining the public outreach program. Results of public outreach will also be used for the EJ analysis.

Actions Required:

1. DTS shall coordinate with EPA for concurrence on methodology for low-income factor.
2. DTS shall develop a Community Impact Assessment for complying with environment justice.

Distribution File: #16434A **By:** Veronica Chan, rev 4/14/06

Meeting Attendees

The above meeting summary is believed to be accurate to the best of the author's knowledge. Meeting attendees are encouraged to send corrections and addenda to the content of these minutes. If no corrections and/or addenda are received within five days from the date of this report, these minutes will be construed as the official record.

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Monday, 24 April, 2006, 10:00a.m. (HST)	**Location:**	DTS and telephone conference
Subject:	Environmental Justice (EJ) coordination meeting with EPA		
Attendees:	Connell Dunning, Debbie Lowe, EPA, Region 9 Faith Miyamoto, Phyllis Kurio, Ken Banao, DTS Lawrence Spurgeon, Nami Ohtomo, Veronica Chan, PB		

Summary:

- The purpose of the meeting was to discuss how to locate where "communities of concern" (minority and low-income populations) exist, determine potential disproportionate and adverse impacts to them, and document consideration of EJ and Title VI concerns. FTA requested that DTS consult with EPA on the EJ analysis methodology. EJ can be a way of helping to comply with Title VI. The overall goal is to try to avoid discriminating against anyone.
- EPA indicated that they had submitted scoping comments and had received the scoping information package.
- PB provided background on the project indicating that the project development process would consist of an Alternatives Analysis (AA), followed by a Draft EIS for the Locally Preferred Alternative (LPA). Currently, the focus is on the AA that would be used as a screening tool for the selection of the LPA. At the end of the AA, the public would be given the opportunity to comment in front of the City Council prior to the City Council selecting the LPA. EPA indicated that if new information arises after the LPA is selected, any of the alternatives that were dropped could be brought back into the analysis.
- EPA had a question about whether the managed lanes alternative was still being considered. EPA indicated that coordination with FHWA was necessary at this early stage because the alternative incorporates highway facilities. PB agreed, and noted that some FHWA input has been received. FHWA will be a cooperating agency.
- PB proposed the following evaluation method for the HHCTC project [as described in the Environmental Justice section of the Environmental Methodology Report (handout) and shown in the EJ Analysis Flow Chart (page 2-9)]:
  1) Quantitative analysis ("preliminary assessment") using census data, followed by qualitative analysis ("secondary assessment") based on other existing sources and local knowledge.
  2) Analyze existing minority populations using federally-defined race categories at the block group level to calculate the concentration of each minority category. Because the population of Oahu is comprised mostly of minorities, analysis of this data may not provide meaningful data. Therefore, PB proposes to analyze linguistic isolation, as well. EPA asked why educational attainment is not being analyzed. PB indicated that the results of educational attainment are likely to be captured by the analysis of low-income populations.
  3) Analyze existing low-income populations using the Census poverty threshold, which is readily available in census data. PB pointed out that the DOT Order (5610.2) defines low-income as at or below the HHS poverty guidelines and that there is a difference between the HHS poverty guidelines and the Census

poverty threshold. EPA concurred that use of Census poverty threshold is reasonable. EPA also suggested looking at median household income. PB explained that median income would be reported in the context of the larger discussion on socio-economic factors, rather than specifically in the EJ discussion.

- PB indicated that FHWA has suggested that *Environmental Justice in the Planning Process: Defining Environmental Justice Populations* (March 2004) be used for baseline conditions for projects on Oahu. PB will be using the OMPO identified minority and low income EJ areas instead of conducting the calculations for minority and low income areas as proposed in the Environmental Methodology Report. Linguistic isolation will still be calculated as proposed in the methodology. EPA suggested that the analysis should have the same reference; in which case the threshold (one standard deviation for distribution of concentration) for linguistically isolated population concentrations should be determined considering the calculated concentration using all of the census tracts island-wide. EPA would like to review OMPO's report. Other demographic data will also be analyzed in the social impacts section of the report as part of the discussion on community setting.
- EPA had a question regarding the spatial scale of analysis. PB clarified that each discipline will have its own study boundaries. EPA inquired whether existing bus routes would be affected by the project. Existing transit lines affected should be followed up like streams to see if there are any impacts. For example, the fact that a proposed LRT may draw dollars away from an existing bus system or create a smaller bus system should be addressed.
- EPA had specific comments on the draft methodology. EPA requested to be part of the review process for the EJ secondary assessment. EPA also reiterated that once the EIS process starts, if new information becomes available, the project should consider all relevant options (alternatives) back on the table.

Actions Required:

1. EPA to review OMPO's EJ report (March 2004) and give DTS an assessment of proposed EJ methodology for the Honolulu High-Capacity Transit Corridor Project.
2. DTS to coordinate with EPA for future reviews.

Distribution File: #16434A **By:** Veronica Chan, 5/12/06

Meeting Attendees

The above meeting summary is believed to be accurate to the best of the author's knowledge. Meeting attendees are encouraged to send corrections and addenda to the content of these minutes. If no corrections and/or addenda are received within five days from the circulation date of this report, these minutes will be construed as the official record.

Honolulu High-Capacity Transit Corridor Project ***Meeting Minutes***

Date of Meeting:	Tuesday, 6 June, 2006, 1:00p.m. (HST)	**Location:**	DTS and telephone conference

Subject: Environmental Justice (EJ) coordination meeting with FHWA

Attendees: Vince Mammano, Jodi Chew, Liz Fischer, FHWA
Faith Miyamoto, Phyllis Kurio, Kenneth Banao, Strather Ing, DTS
Lawrence Spurgeon, Veronica Chan, PB

Summary:

- The purpose of the meeting was to discuss how to locate "communities of concern" (minority and low-income populations), determine potential disproportionate and adverse impacts to them, and document consideration of EJ and Title VI concerns. The results reported in *Environmental Justice in the Planning Process: Defining Environmental Justice Populations* (OMPO, March 2004) are being used to develop a community profile of the study corridor as described in the project methodology.
- PB provided background on the project indicating that the project development process would consist of an Alternatives Analysis (AA), followed by a Draft EIS for the Locally Preferred Alternative (LPA). Currently, the focus is on the AA that would be used as a screening tool for the selection of the LPA and is not a full disclosure document.
- FHWA indicated that if FHWA funds are involved, then HDOT should also be involved. Rey Domingo is the head of the HDOT Civil Rights Division. DTS has met with Ben Gorospe in regards to EJ for the proposed project. DTS stated that FHWA and HDOT will each be receiving invitation letters to be cooperating agencies.
- FHWA indicated that if the project changes from how it is currently identified and described within the current STIP (2006-2008), the project may be delayed due to nonconformance (SAFETEA-LU requires states to have STIPs that meet the new requirements identified in the law effective 1 July 2007. If the STIP is not compliant by that date, no major amendments may be made until the STIP is compliant with SAFETEA-LU requirements). DTS stated that the Project's preliminary engineering phase is included in the FY 2007 component of the current STIP.
- PB proposed the following evaluation method for the HHCTC project [as shown in the EJ Analysis Flow Chart (handout)]:

  1) Analyze low income or minority EJ areas as reported by OMPO. PB indicated that it understood that, in the past, FHWA suggested that OMPO's *Environmental Justice in the Planning Process: Defining Environmental Justice Populations* (March 2004) (www.oahumpo.org/T6EJ/Final2001/2004Update.pdf) be used for baseline conditions for projects on Oahu. PB will be using the OMPO identified minority and low income EJ areas.

  2) Analyze existing linguistically isolated households using the threshold identified in the methodology. FHWA will provide additional resource information on literacy data. (FHWA subsequently provided the following information: The web link to FHWA's recent publication, "How to Engage Low-Literacy and Limited-English-Proficiency Populations in Transportation Decisionmaking":

www.fhwa.dot.gov/hep/lowlim/index.htm; FHWA's Public Involvement pages with interesting ideas, practices, and case studies: www.fhwa.dot.gov/environment/pubinv2.htm and www.planning.dot.gov/technical.asp#pub; and Florida DOT's Public Involvement Handbook for outreach techniques, www.dot.state.fl.us/emo/pubs/public_involvement/pubinvolve.htm.)

3) Refine the preliminary results of census data with qualitative analysis ("secondary assessment") based on other existing data sources and local knowledge.

- FHWA suggested that the title of the flowchart should be revised from "Environmental Justice Analysis" to a broader and more encompassing title because there are other elements in the flowchart, in particular those items going beyond EJ, such as the linguistic community analyses, that address the unique needs of Oahu. The flowchart should also distinguish those elements that are not defined as EJ.
- FHWA asked whether DTS was analyzing station sites with respect to transit oriented development (TOD) to support the needs of economically disadvantaged communities. Transit oriented development offers opportunities to connect and develop communities and for DTS to work more closely with staff in City/County land use planning. [1]
- FHWA stated that DTS should consider ADA guidelines as the proposed elevated structures would be accessible by elevators and stairs. In the event that an elevator breaks down, non-mechanical alternatives must be available. Furthermore, elevators add maintenance and cost factors.
- FHWA stated that bike and pedestrian access should also be considered. Access to stations from outside facilities (crosswalks, etc.) should be addressed.
- DTS reiterated that the AA would probably not provide a fine level of detail to address FHWA's recommendations regarding the elevators and bike and pedestrian access. DTS' target date to complete the AA is October 31, 2006.
- FHWA asked what steps have been taken so far to outreach to linguistically isolated populations. PB indicated that during the scoping process, ethnic newspapers and media outlets were provided with a translated advertisement to announce. Service providers, churches, and ethnic markets were provided with translated newsletters with information on how to request translated material. The next step will be a feed back loop to the public outreach team to identify which languages are the most important and where. The goal will be to match those future transit stops with the appropriate translation media and services. The Speakers Bureau members have been distributing translated materials, if necessary. However, all questions have been asked in English so far and no translation services have been necessary during the Speakers Bureau presentations. FHWA suggested that DTS provide Speakers Bureau presentations to agencies, such as HDOT, for informal discussion and dissemination to the agency staff. These staff members are often active members of the community

[1]For examples, see: www.transitorienteddevelopment.org, www.vtpi.org/tdm/tdm45.htm, www.rtd-denver.com/Projects/TOD/index.html, http://transitorienteddevelopment.dot.ca.gov, www.newurbanism.org/index.html, www.mbta.com/projects_underway/tod.asp, www.smartergrowth.net/issues/landuse/tod/index.html, www.metrokc.gov/kcdot/transit/tod/.

and can provide conduits for dissemination of information.

- FHWA suggested that both HDOT highway planning and design branches be involved in discussions. Ron Tsuzuki (HWY-P) and Dean Nakagawa (DOT-STP) are potential contacts. Discussions with the Harbors and Airports Divisions have already occurred so that the transit project can be coordinated with any planned changes. HDOT is being invited to be a cooperating agency. A similar invitation is being extended to FHWA.
- FHWA indicated that HDOT should be included in every discussion in which FHWA and FTA have been invited. HDOT is responsible for planning level analysis, while FHWA has oversight responsibilities. After receipt of the requests to be cooperating agencies, the teams should meet and talk about the project and study approach.
- DTS recognizes HDOT's role related to highway planning analyses and FHWA's oversight of HDOT. However, the HHCTCP's AA is currently under FTA's jurisdiction and oversight. HDOT would not necessarily be included in discussions between DTS and FTA when such discussions focus on transit-related aspects/requirements under FTA's authority.

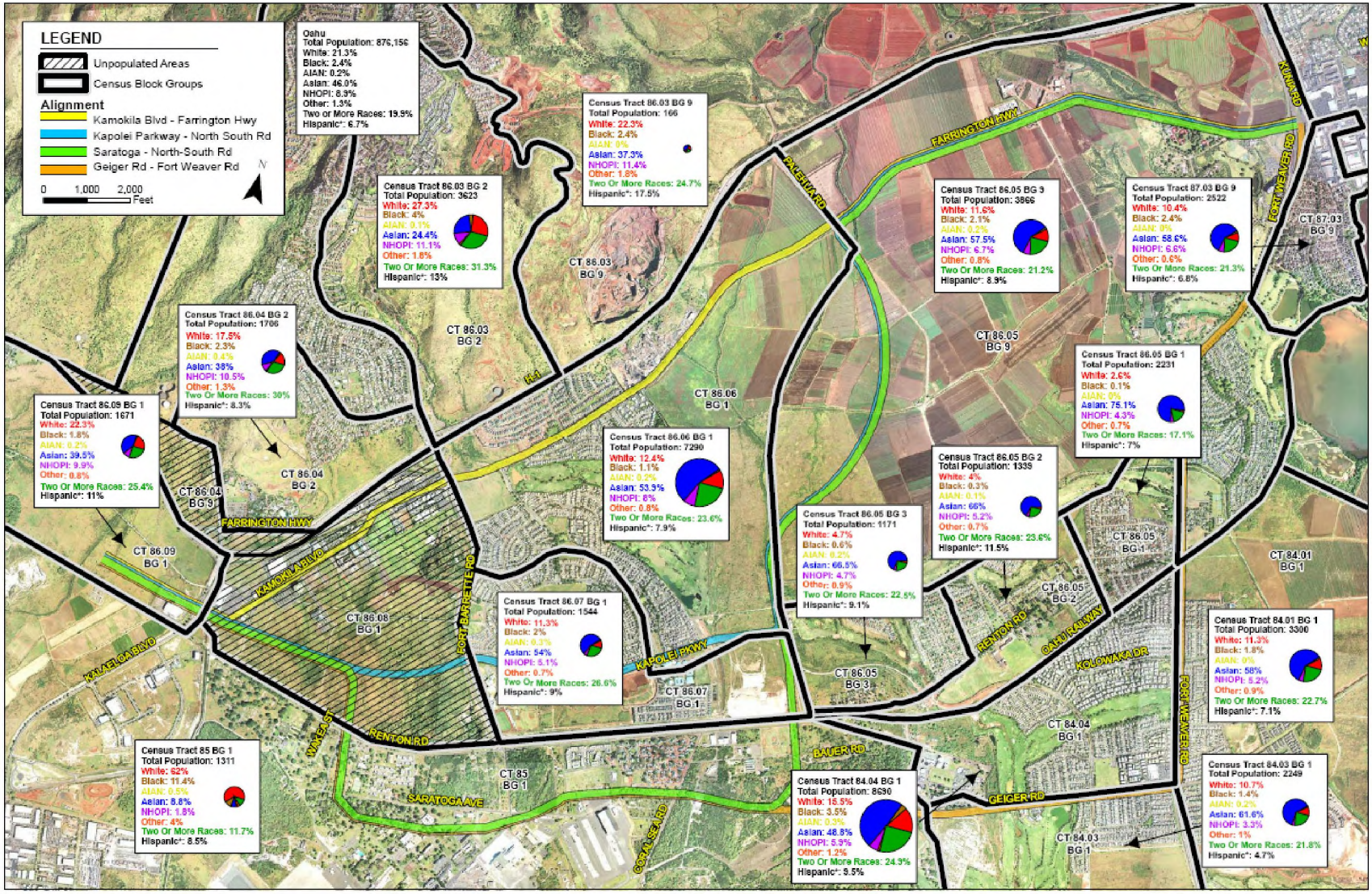
Actions Required:

1. DTS to coordinate with HDOT on cooperating agency status and involvement.
2. DTS to set up a Speakers Bureau presentation for HDOT.

Distribution File: #16434A **By:** Veronica Chan, 7/11/06

Meeting Attendees

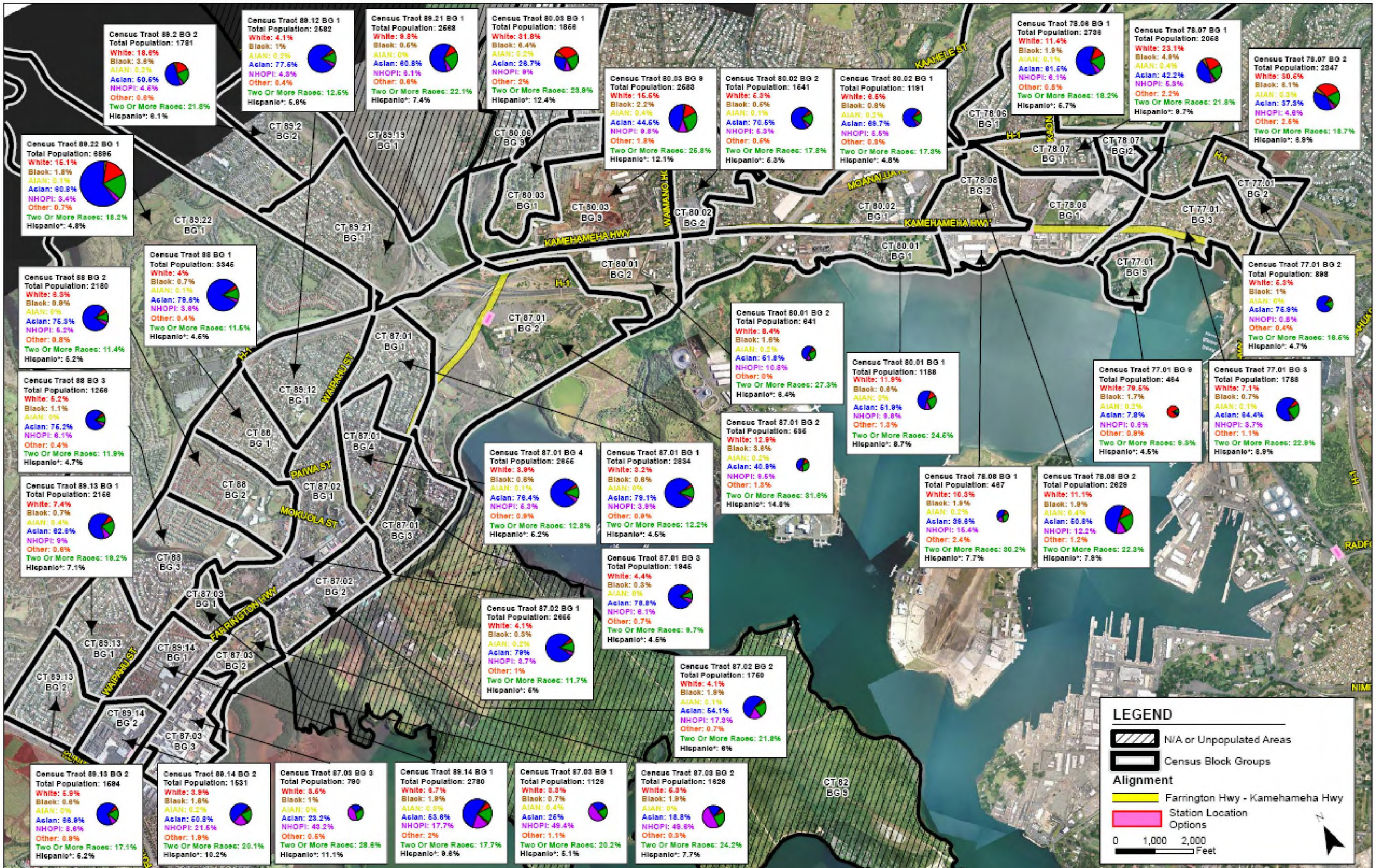
Appendix B Census Bureau Data



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000: White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American FactFinder <http://factfinder.census.gov/>Accessed March 2006.

Section I - Kapolei to Fort Weaver

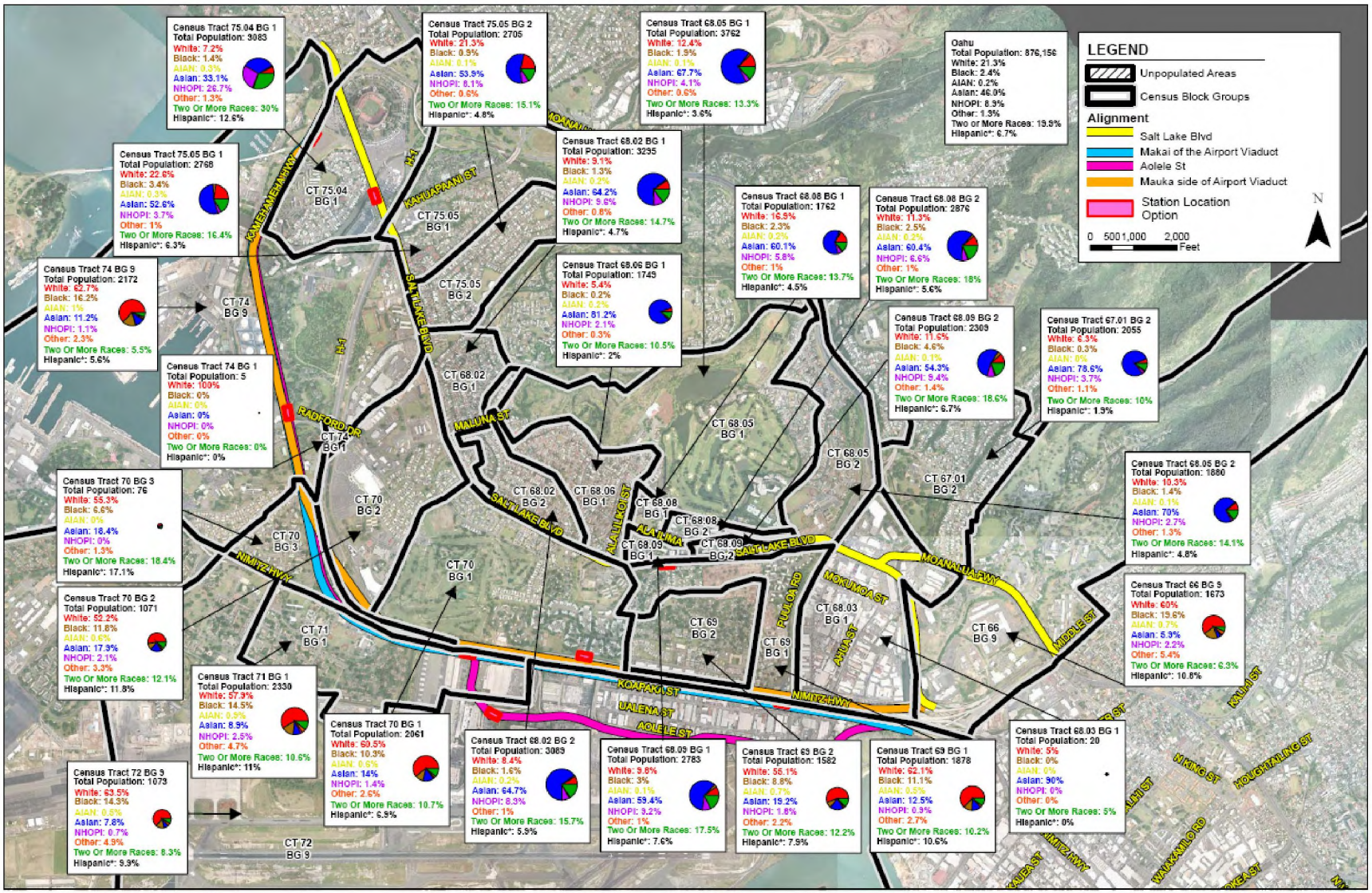
Figure B-1. Year 2000 Demographics (Section I. Kapolei to Fort Weaver Road)



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000: White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder <http://factfinder.census.gov/>Accessed March 2006.

Section II - Fort Weaver Road to Aloha Stadium

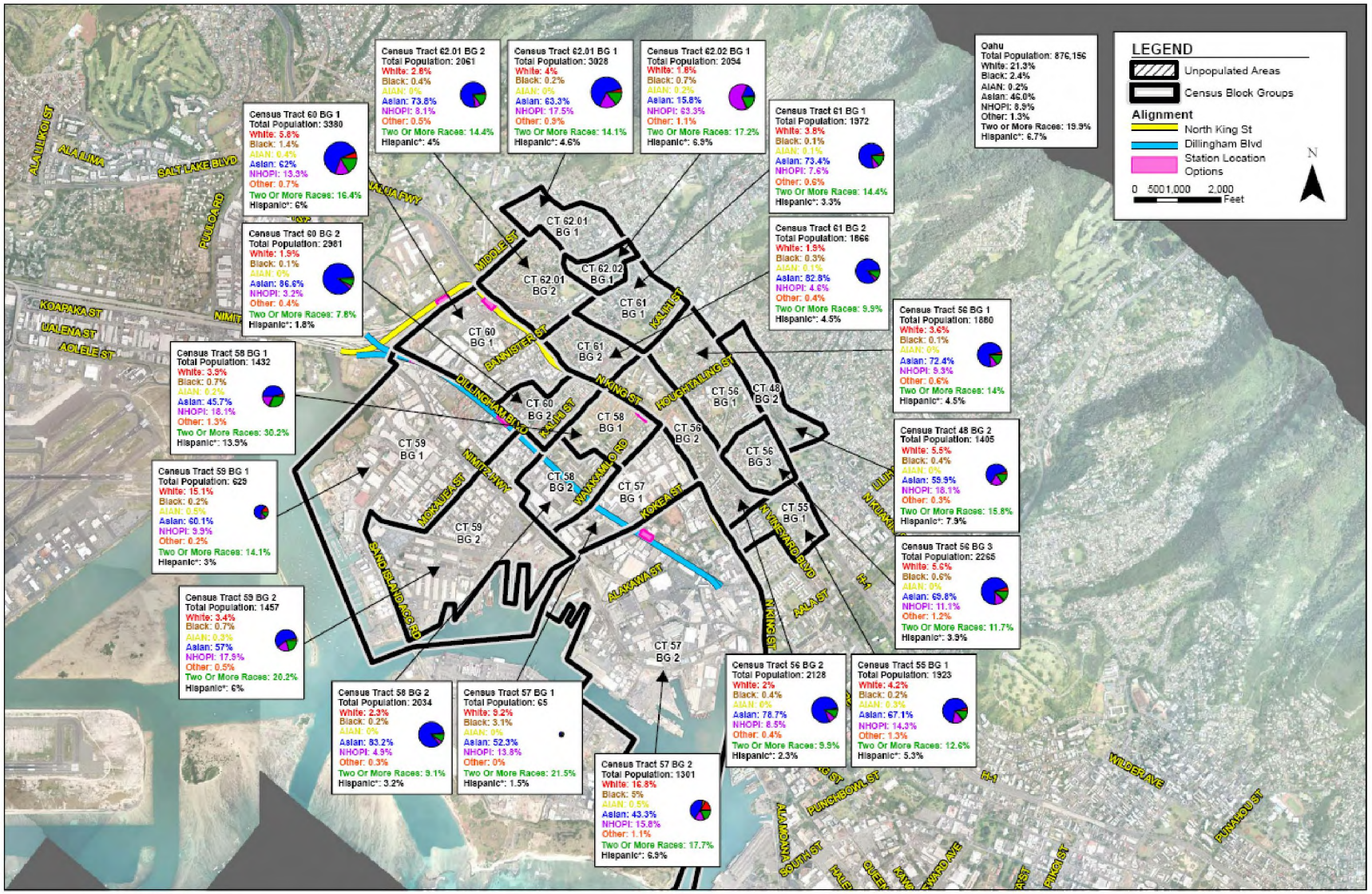
Figure B-2. Year 2000 Demographics (Section II. Fort Weaver Road to Aloha Stadium)



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000: White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American FactFinder <http://factfinder.census.gov>Accessed March 2008.

Section III - Aloha Stadium to Keehi Interchange

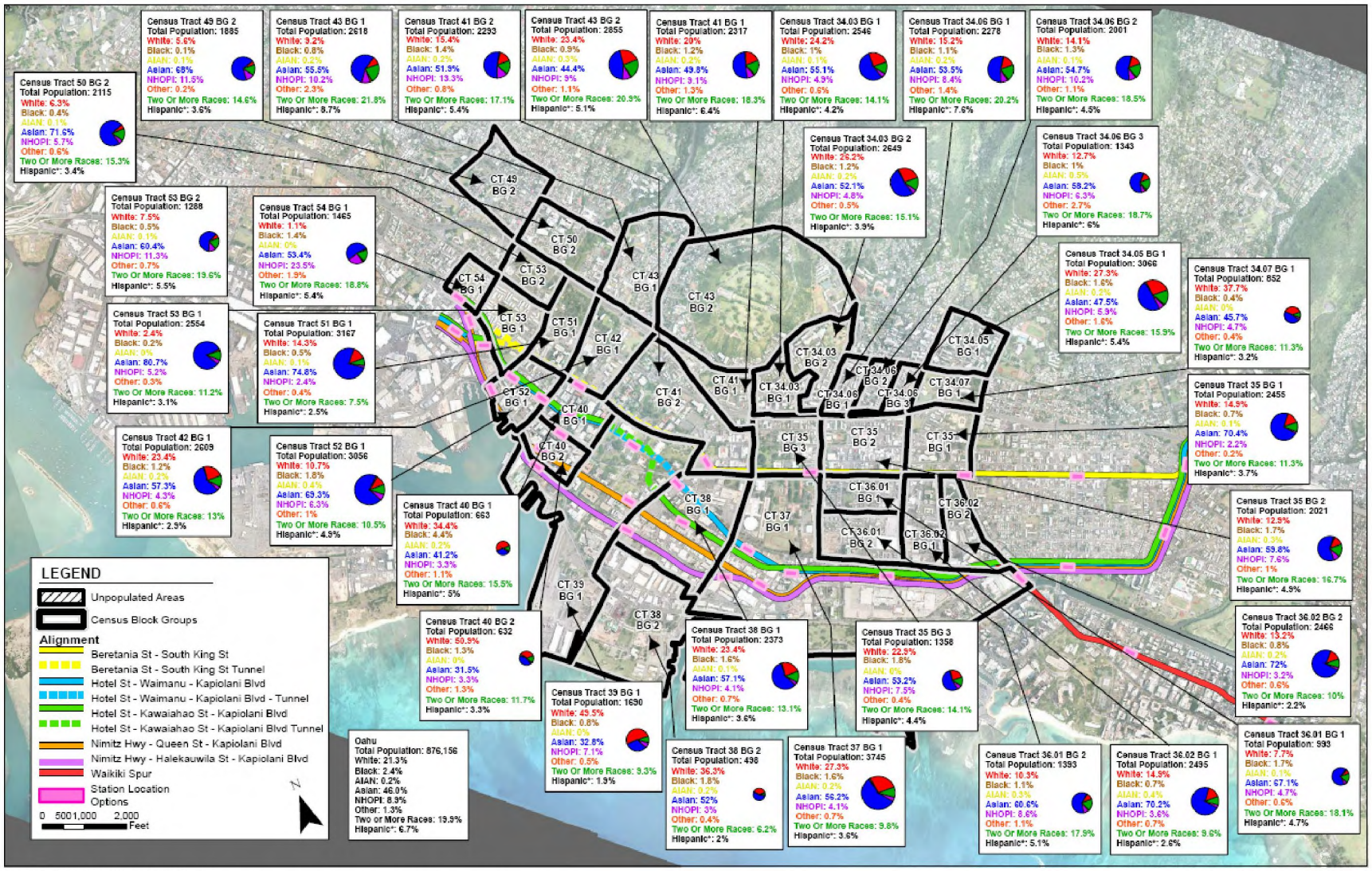
Figure B-3. Year 2000 Demographics (Section III. Aloha Stadium to Middle Street)



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000: White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder <http://factfinder.census.gov/>Accessed March 2006.

Section IV - Keehi Interchange to Iwilei

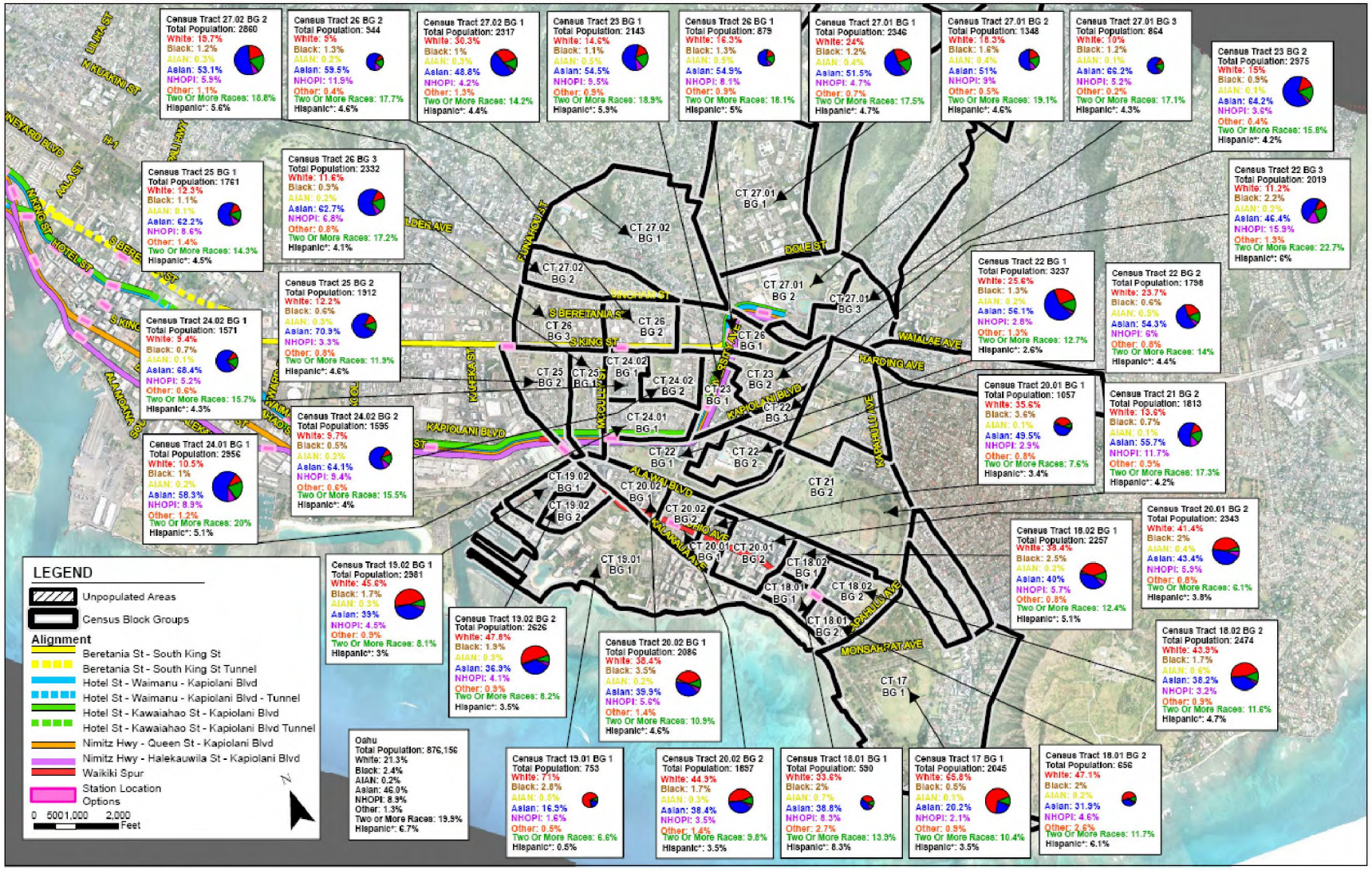
Figure B-4. Year 2000 Demographics (Section IV. Middle Street to Iwilei)



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000: White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American FactFinder <http://factfinder.census.gov/>Accessed March 2006.

Section V - Iwilei to UH Manoa

Figure B-5. Year 2000 Demographics (Section V. Iwilei to UH Mānoa - Part 1)



Notes: Size of the pie chart increases with increasing population.
Race is defined by the Census Bureau for Census 2000. White = White alone; Black = Black or African-American alone; AIAN = American Indian or Alaska Native alone; Asian = Asian alone; NHOPI = Native Hawaiian or other Pacific Islander alone; Other = Some other race alone.
Hispanic*: The category Hispanic or Latino is not a racial group but an ethnic identity, and persons may be of any race and is not represented the pie chart.
Source: U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American FactFinder <http://factfinder.census.gov/>Accessed March 2006.

Section V - Iwilei to UH Manoa

Figure B-6. Year 2000 Demographics (Section V. Iwilei to UH Mānoa - Part 2)

Table B-1: Year 2000 Demographic Characteristics by Census Tract

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
Oahu		876,156	21%	2%	0.2%	46%	14%	18%	2%	1%	9%	6%	2%	1%	20%	7%	17%	63%	13%	35.7
Managed Lanes																				
57	Iwilei-Anuenue	1,550	18%	5%	0.5%	41%	21%	8%	2%	3%	15%	8%	4%	1%	20%	4%	11%	73%	12%	40.4
58	Waiakamilo	3,466	3%	0.4%	0.1%	68%	51%	4%	2%	5%	10%	4%	4%	1%	18%	7%	24%	57%	12%	32.6
59	Mokauea	2,086	7%	1%	0.3%	58%	44%	10%	1%	1%	15%	7%	3%	0.4%	18%	7%	17%	63%	13%	37.3
66	Kahauiki	1,673	60%	20%	1%	6%	3%	1%	1%	0.1%	2%	1%	0.5%	5%	6%	14%	18%	67%	0%	24.8
68.03	Mapunapuna	20	5%	0%	0%	90%	50%	40%	0%	0%	0%	0%	0%	0%	5%	0%	20%	25%	55%	69.5
69	Radford	3,460	59%	10%	1%	16%	12%	2%	0.5%	0.1%	1%	1%	0.3%	2%	11%	15%	24%	61%	0%	25.3
70	Makalapa	3,208	58%	11%	1%	15%	10%	3%	1%	0.3%	2%	0.2%	1%	3%	11%	14%	16%	70%	0%	26.9
71	Ohana Nui	2,330	58%	15%	1%	9%	4%	1%	2%	0.2%	3%	1%	0.5%	5%	11%	13%	33%	54%	0%	24.6
72	Airport	1,073	63%	14%	0.5%	8%	3%	1%	1%	0.5%	1%	0.1%	0.2%	5%	8%	9%	20%	71%	0%	22.6
74	Pearl Harbor	2,177	63%	16%	1%	11%	8%	2%	0.3%	0.5%	1%	0.2%	0.4%	2%	6%	4%	9%	86%	1%	26.7
75.04	Aloha Stadium	3,083	7%	1%	0.3%	33%	16%	9%	1%	2%	27%	9%	13%	1%	30%	9%	26%	54%	11%	28.7
77.01	Lower Aiea	4,132	15%	1%	0.1%	62%	26%	27%	1%	0.4%	3%	2%	1%	1%	18%	7%	16%	56%	21%	39.2
78.08	Pearl Ridge Center	3,096	11%	2%	0.4%	49%	24%	15%	2%	0.5%	13%	6%	3%	1%	24%	7%	18%	63%	11%	33.4
80.01	Hale Mohalu	1,829	11%	1%	0.1%	52%	17%	25%	2%	1%	10%	7%	1%	1%	25%	5%	14%	52%	29%	43.6
80.02	Kula Drive	2,732	6%	1%	0.1%	70%	18%	40%	1%	1%	5%	4%	1%	0.4%	18%	3%	14%	51%	31%	46.3
80.03	Kuokoa Street	4,439	22%	4%	0.3%	37%	17%	10%	3%	1%	9%	4%	3%	2%	25%	8%	20%	65%	8%	30.8
87.01	Waipahu Park	7,969	4%	1%	0.1%	76%	57%	13%	0.4%	0.2%	5%	2%	2%	1%	13%	6%	18%	59%	17%	37.3

Table B-1: Year 2000 Demographic Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
88	Waipahu-Mauka	6,781	5%	1%	0.1%	77%	59%	13%	1%	1%	5%	3%	2%	1%	12%	6%	17%	58%	20%	40.2
89.12	August Ahrens School	2,582	4%	1%	0.2%	77%	56%	15%	1%	0.3%	4%	2%	2%	0.4%	13%	5%	16%	61%	18%	40.4
89.20	Waipio Gentry Industrial-Koa Ridge	4,704	15%	4%	0.2%	51%	11%	26%	3%	0.3%	6%	3%	2%	1%	23%	6%	19%	70%	5%	34.1
89.21	Seaview-Crestview	2,568	10%	1%	0.0%	61%	42%	13%	0.3%	0.2%	6%	4%	1%	1%	22%	6%	18%	63%	13%	36.3
89.22	Waikele	6,895	15%	2%	0.1%	61%	21%	25%	2%	0.3%	3%	2%	0.4%	1%	18%	10%	16%	70%	5%	33.8
Fixed Guideway Alternative																				
I. Kapolei to Fort Weaver Road																				
84.01	Ewa Gentry-East	3,300	11%	2%	0%	58%	41%	9%	1%	0%	5%	3%	1%	1%	23%	11%	23%	62%	5%	30.2
84.03	Ocean Pointe	2,249	11%	1%	0.2%	62%	33%	16%	1%	0.3%	3%	3%	0.4%	1%	22%	9%	21%	66%	4%	33
84.04	Ewa Gentry-West	8,690	16%	4%	0.3%	49%	27%	13%	1%	0.3%	6%	4%	1%	1%	25%	11%	19%	67%	4%	30.8
85	Barbers Point	1,311	62%	11%	0.5%	9%	7%	1%	0.3%	0.1%	2%	1%	0.2%	4%	12%	17%	22%	60%	1%	25.3
86.03	Kahe	9,882	25%	3%	0.2%	34%	18%	8%	1%	0.2%	9%	7%	2%	1%	27%	9%	22%	64%	5%	31.9
86.04	Makakilo	4,097	19%	2%	0.2%	34%	23%	6%	1%	0.0%	12%	10%	2%	1%	31%	7%	22%	61%	10%	34.1
86.05	East Kapolei-Ewa Villages	8,607	7%	1%	0.2%	65%	47%	8%	2%	0.2%	6%	4%	1%	1%	21%	8%	21%	59%	13%	34
86.06	Villages of Kapolei-North	7,290	12%	1%	0.2%	54%	31%	9%	2%	0.4%	8%	6%	2%	1%	24%	9%	27%	60%	4%	30.5
86.07	Villages of Kapolei-South	1,544	11%	2%	0.3%	54%	29%	11%	3%	2%	5%	3%	2%	1%	27%	11%	27%	59%	3%	29.6

Table B-1: Year 2000 Demographic Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
86.09	Ko Olina Expansion	1,671	22%	2%	0.2%	39%	27%	7%	1%	0.1%	10%	6%	4%	1%	25%	6%	18%	67%	10%	36
II. Fort Weaver Road to Aloha Stadium																				
77.01	Lower Aiea	4,132	15%	1%	0.1%	62%	26%	27%	1%	0.4%	3%	2%	1%	1%	18%	7%	16%	56%	21%	39.2
78.08	Pearl Ridge Center	3,096	11%	2%	0.4%	49%	24%	15%	2%	0.5%	13%	6%	3%	1%	24%	7%	18%	63%	11%	33.4
80.01	Hale Mohalu	1,829	11%	1%	0.1%	52%	17%	25%	2%	1%	10%	7%	1%	1%	25%	5%	14%	52%	29%	43.6
80.02	Kula Drive	2,732	6%	1%	0.1%	70%	18%	40%	1%	1%	5%	4%	1%	0.4%	18%	3%	14%	51%	31%	46.3
80.03	Kuokoa Street	4,439	22%	4%	0.3%	37%	17%	10%	3%	1%	9%	4%	3%	2%	25%	8%	20%	65%	8%	30.8
87.01	Waipahu Park	7,969	4%	1%	0.1%	76%	57%	13%	0.4%	0.2%	5%	2%	2%	1%	13%	6%	18%	59%	17%	37.3
87.02	St. Joseph School	4,405	4%	1%	0.1%	69%	54%	10%	1%	0.2%	9%	2%	5%	1%	16%	5%	18%	55%	21%	39.5
87.03	Waipahu Intermediate School	6,064	7%	2%	0.1%	37%	26%	5%	1%	0.5%	31%	5%	17%	1%	23%	10%	27%	58%	5%	27
88	Waipahu-Mauka	6,781	5%	1%	0.1%	77%	59%	13%	1%	1%	5%	3%	2%	1%	12%	6%	17%	58%	20%	40.2
89.13	Robinson Heights	3,750	7%	1%	0.2%	64%	43%	16%	0.4%	0.1%	9%	5%	3%	1%	18%	6%	18%	59%	18%	37.7
89.14	Punawai	4,311	6%	2%	0.3%	53%	45%	5%	1%	0.2%	19%	4%	12%	2%	19%	10%	26%	57%	7%	28.4
89.21	Seaview-Crestview	2,568	10%	1%	0.0%	61%	42%	13%	0.3%	0.2%	6%	4%	1%	1%	22%	6%	18%	63%	13%	36.3
III. Aloha Stadium to Middle Street																				
66	Kahauiki	1,673	60%	20%	1%	6%	3%	1%	1%	0.1%	2%	1%	0.5%	5%	6%	14%	18%	67%	0%	24.8
67.01	Tripler	6,356	15%	4%	0.1%	66%	8%	42%	2%	0.3%	3%	2%	0.2%	1%	11%	5%	12%	56%	27%	44.3

Table B-1: Year 2000 Demographic Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
68.02	Aliamanu	6,384	9%	1%	0.2%	64%	50%	7%	1%	0.2%	9%	3%	4%	1%	15%	6%	19%	61%	14%	36.1
68.03	Mapunapuna	20	5%	0%	0%	90%	50%	40%	0%	0%	0%	0%	0%	0%	5%	0%	20%	25%	55%	69.5
68.05	Salt Lake-East	5,642	12%	2%	0.1%	68%	9%	30%	9%	1%	4%	2%	1%	1%	14%	5%	12%	70%	13%	39.8
68.06	Salt Lake-West	1,749	5%	0.2%	0.2%	81%	11%	44%	3%	0.1%	2%	1%	1%	0.3%	11%	4%	9%	59%	28%	52.9
68.08	Ala Ilima High Rise-Mauka	4,638	13%	2%	0.2%	60%	16%	14%	13%	1%	6%	3%	2%	1%	16%	5%	15%	71%	8%	36.4
68.09	Ala Ilima High Rise-Makai	5,092	11%	4%	0.1%	57%	17%	11%	8%	1%	9%	3%	3%	1%	18%	7%	18%	67%	8%	32.8
69	Radford	3,460	59%	10%	1%	16%	12%	2%	0.5%	0.1%	1%	1%	0.3%	2%	11%	15%	24%	61%	0%	25.3
70	Makalapa	3,208	58%	11%	1%	15%	10%	3%	1%	0.3%	2%	0.2%	1%	3%	11%	14%	16%	70%	0%	26.9
71	Ohana Nui	2,330	58%	15%	1%	9%	4%	1%	2%	0.2%	3%	1%	0.5%	5%	11%	13%	33%	54%	0%	24.6
72	Airport	1,073	63%	14%	0.5%	8%	3%	1%	1%	0.5%	1%	0.1%	0.2%	5%	8%	9%	20%	71%	0%	22.6
74	Pearl Harbor	2,177	63%	16%	1%	11%	8%	2%	0.3%	0.5%	1%	0.2%	0.4%	2%	6%	4%	9%	86%	1%	26.7
75.04	Aloha Stadium	3,083	7%	1%	0.3%	33%	16%	9%	1%	2%	27%	9%	13%	1%	30%	9%	26%	54%	11%	28.7
75.05	Foster Village	5,473	22%	2%	0.2%	53%	26%	12%	2%	2%	6%	3%	2%	1%	16%	5%	17%	66%	13%	37.8
IV. Middle Street to Iwilei																				
53	Aala	3,842	4%	0.3%	0.1%	74%	7%	9%	12%	1%	7%	5%	2%	0.4%	14%	3%	15%	58%	23%	44.2
54	Mayor Wright Housing	1,465	1%	1%	0%	53%	11%	1%	1%	22%	23%	7%	13%	2%	19%	7%	34%	52%	7%	22.4
55	Palama	1,923	4%	0.2%	0.3%	67%	32%	5%	6%	2%	14%	2%	6%	1%	13%	6%	18%	59%	18%	39.1
56	Kapalama	6,273	4%	0.4%	0.0%	74%	44%	12%	2%	3%	10%	4%	4%	1%	12%	6%	16%	55%	23%	40.9
57	Iwilei-Anuenue	1,550	18%	5%	0.5%	41%	21%	8%	2%	3%	15%	8%	4%	1%	20%	4%	11%	73%	12%	40.4

Table B-1: Year 2000 Demographic Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
58	Waiakamilo	3,466	3%	0.4%	0.1%	68%	51%	4%	2%	5%	10%	4%	4%	1%	18%	7%	24%	57%	12%	32.6
59	Mokauea	2,086	7%	1%	0.3%	58%	44%	10%	1%	1%	15%	7%	3%	0.4%	18%	7%	17%	63%	13%	37.3
60	Kalihi Kai	6,361	4%	1%	0.2%	74%	65%	5%	0.4%	1%	9%	4%	3%	1%	12%	6%	17%	65%	13%	34.4
61	Kalihi Waena	3,838	3%	0.2%	0.1%	78%	63%	9%	1%	0.2%	6%	4%	2%	1%	12%	6%	17%	59%	18%	39.1
62.01	Kam IV	5,089	3%	0.3%	0.0%	68%	52%	10%	0.3%	0.3%	14%	5%	7%	1%	14%	6%	19%	59%	16%	36.3
V. Iwilei to UH Manoa																				
18.01	Koa Avenue	1,246	41%	2%	0.4%	35%	9%	13%	4%	1%	6%	3%	1%	3%	13%	3%	6%	75%	16%	41.2
18.02	Jefferson School	4,731	41%	2%	0.4%	39%	5%	14%	6%	2%	4%	2%	0.3%	1%	12%	4%	8%	72%	16%	40.5
19.01	Waikiki Beach	753	71%	3%	0.5%	17%	2%	8%	1%	1%	2%	1%	0%	1%	7%	3%	6%	58%	33%	53.7
19.02	Ena Road	5,607	47%	2%	0.3%	38%	4%	19%	5%	1%	4%	2%	1%	1%	8%	3%	6%	67%	24%	46.1
20.01	Seaside Avenue	3,400	40%	2%	0.3%	45%	4%	20%	6%	2%	5%	2%	0.3%	1%	7%	4%	5%	75%	16%	41.3
20.02	Olohana Street	3,983	42%	3%	0.2%	39%	3%	17%	5%	1%	5%	2%	1%	1%	10%	3%	6%	77%	13%	37.7
21	Olokele Avenue	3,520	14%	1%	0.1%	54%	3%	30%	3%	2%	11%	5%	1%	1%	20%	6%	12%	70%	12%	36.9
22	Kamoku Street	7,054	21%	1%	0.3%	53%	4%	23%	9%	3%	7%	3%	1%	1%	16%	5%	12%	71%	12%	38.1
23	Moiliili	5,118	15%	1%	0.2%	60%	4%	31%	6%	3%	6%	3%	1%	1%	17%	4%	13%	71%	12%	36.3
24.01	Upper McCully	2,956	10%	1%	0.2%	58%	6%	27%	5%	5%	9%	4%	1%	1%	20%	6%	12%	68%	14%	36.5
24.02	Lower McCully	3,166	10%	1%	0.1%	66%	4%	41%	7%	3%	7%	3%	0.4%	1%	16%	5%	12%	66%	17%	39.7
25	Pawaa	3,673	12%	1%	0.2%	67%	5%	37%	5%	3%	6%	3%	0.5%	1%	13%	4%	10%	65%	22%	43.6
26	Bingham Tract	4,155	12%	1%	0.2%	60%	5%	30%	5%	2%	8%	5%	1%	1%	17%	4%	9%	67%	20%	41

Table B-1: Year 2000 Demographic Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	TOTAL POPULATION	WHITE	BLACK	AIAN	ASIAN	Filipino	Japanese	Korean	Vietnamese	NHOPI	Hawaiian	Samoan	OTHER	TWO OR MORE RACES	AGE (YEARS)				MEDIAN AGE (YEARS)
																Less Than 5	5 to 17	18 to 64	65 or Older	
27.01	University	4,558	20%	1%	0.3%	54%	6%	27%	3%	1%	6%	3%	1%	1%	18%	2%	5%	85%	8%	22.5
27.02	Punahou	5,177	24%	1%	0.3%	51%	4%	24%	5%	2%	5%	3%	0.3%	1%	17%	4%	12%	71%	13%	36.6
35	Kaahumanu School	5,834	16%	1%	0.2%	63%	4%	24%	14%	3%	5%	2%	1%	1%	14%	3%	10%	64%	24%	44
36.01	Sheridan Street	2,386	9%	1%	0.2%	63%	7%	32%	8%	4%	7%	3%	1%	1%	18%	6%	12%	65%	17%	39.4
36.02	Kaheka Street	4,961	14%	1%	0.3%	71%	3%	27%	19%	4%	3%	2%	0.4%	1%	10%	3%	6%	64%	27%	46.2
37	Ala Moana	3,745	27%	2%	0.2%	56%	3%	25%	8%	2%	4%	2%	1%	1%	10%	4%	9%	72%	15%	39.9
38	Kakaako	2,871	26%	2%	0.1%	56%	4%	24%	12%	2%	4%	3%	1%	1%	12%	4%	7%	65%	24%	44.2
39	Civic Circle	1,690	49%	1%	0%	33%	7%	15%	1%	0.2%	7%	3%	0.1%	1%	9%	5%	8%	74%	14%	42
40	Central Business District	1,295	42%	3%	0.1%	36%	5%	13%	3%	1%	3%	2%	1%	1%	14%	2%	4%	83%	11%	36.7
41	Queen's Hospital	4,610	18%	1%	0.2%	51%	7%	20%	5%	3%	11%	5%	1%	1%	18%	5%	11%	69%	16%	39.1
42	Queen Emma Gardens	2,609	23%	1%	0.2%	57%	4%	19%	7%	1%	4%	3%	0.3%	1%	13%	3%	6%	72%	20%	41.7
51	Foster Botanic Garden	3,167	14%	0.5%	0.1%	75%	3%	10%	16%	5%	2%	1%	0.2%	0.4%	8%	4%	11%	67%	18%	42.4
52	Chinatown	3,056	11%	2%	0.4%	69%	9%	4%	10%	13%	6%	4%	2%	1%	10%	5%	11%	66%	19%	41.5

Sources: City and County of Honolulu, Department of Planning and Permitting. Community Profiles by Development Plan Area: 2000, May 2003.
U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder <http://factfinder.census.gov/servlet/DatasetMainPageServlet?> Accessed March 1, 2005.

Table B-2: Year 2000 Language Characteristics by Census Tract

CENSUS TRACT	NAME	SPEAK ONLY ENGLISH	LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH[1]							
			SPEAK SPANISH	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER INDO-EUROPEAN LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK ASIAN AND PACIFIC ISLAND LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL
Oahu		71%	1.6%	0.4%	1%	0.3%	26%	13%	0.2%	0.1%
Managed Lanes										
57	Iwilei-Anuenue	60%	2%	0%	3%	1%	34%	19%	2%	1%
58	Waiakamilo	43%	0%	0%	1%	1%	56%	35%	0.3%	0.3%
59	Mokauea	49%	0.3%	0%	1%	0.3%	50%	33%	0%	0%
66	Kahauiki	82%	13%	3%	1%	0%	3%	0%	0.4%	0%
68.03	Mapunapuna	21%	0%	0%	0%	0%	79%	17%	0%	0%
69	Radford	84%	4%	1%	1%	0%	11%	4%	0.2%	0%
70	Makalapa	78%	5%	1%	1%	0.2%	15%	6%	0.3%	0%
71	Ohana Nui	81%	8%	3%	2%	0.2%	9%	3%	0%	0%
72	Airport	83%	7%	1%	4%	1%	6%	2%	0%	0%
74	Pearl Harbor	81%	7%	3%	3%	1%	8%	4%	1%	0%
75.04	Aloha Stadium	70%	0.3%	0%	0.5%	0.2%	29%	17%	0%	0%
77.01	Lower Aiea	71%	1%	0.3%	0.4%	0%	27%	15%	1%	0.1%
78.08	Pearl Ridge Center	66%	1%	0.5%	0%	0%	32%	18%	1%	0%
80.01	Hale Mohalu	58%	0%	0%	0%	0%	42%	20%	0%	0%
80.02	Kula Drive	66%	0.5%	0.3%	0%	0%	33%	14%	0%	0%
80.03	Kuokoa Street	68%	2%	0.1%	1%	0.1%	29%	11%	0%	0%
87.01	Waipahu Park	51%	0.2%	0%	0.2%	0%	48%	27%	0%	0%
88	Waipahu-Mauka	47%	0%	0%	0.2%	0%	52%	29%	0.1%	0.1%
89.12	August Ahrens School	60%	0%	0%	0%	0%	40%	19%	0%	0%

Table B-2: Year 2000 Language Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	SPEAK ONLY ENGLISH	LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH[1]							
			SPEAK SPANISH	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER INDO-EUROPEAN LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK ASIAN AND PACIFIC ISLAND LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL
89.20	Waipio Gentry Industrial-Koa Ridge	78%	1%	0%	1%	0.3%	20%	9%	0%	0%
89.21	Seaview-Crestview	67%	1%	0%	0%	0%	32%	15%	0%	0%
89.22	Waikele	69%	1%	0%	1%	0.1%	29%	11%	0%	0%
Fixed Guideway Alternative										
I. Kapolei to Fort Weaver Road										
84.01	Ewa Gentry-East	71%	2%	0%	0.3%	0%	26%	7%	0%	0%
84.03	Ocean Pointe	68%	2%	1%	1%	0%	28%	12%	0%	0%
84.04	Ewa Gentry-West	73%	2%	0.4%	0.4%	0%	24%	13%	0.1%	0%
85	Barbers Point	85%	1%	0.0%	0.1%	0%	13%	4%	1%	0.5%
86.03	Kahe	77%	2%	0.2%	1%	0.2%	20%	9%	0.1%	0%
86.04	Makakilo	78%	1%	0%	1%	0%	20%	7%	0%	0%
86.05	East Kapolei-Ewa Villages	60%	1%	0.3%	0.4%	0.1%	39%	21%	0.2%	0.2%
86.06	Villages of Kapolei-North	66%	1%	0.2%	1%	0%	33%	13%	0.1%	0%
86.07	Villages of Kapolei-South	65%	1%	0%	0%	0%	33%	16%	0%	0%
86.09	Ko Olina Expansion	70%	1%	0%	2%	1%	26%	11%	0%	0%
II. Fort Weaver Road to Aloha Stadium										
77.01	Lower Aiea	71%	1%	0.3%	0.4%	0%	27%	15%	1%	0.1%
78.08	Pearl Ridge Center	66%	1%	0.5%	0%	0%	32%	18%	1%	0%
80.01	Hale Mohalu	58%	0%	0%	0%	0%	42%	20%	0%	0%
80.02	Kula Drive	66%	0.5%	0.3%	0%	0%	33%	14%	0%	0%

Table B-2: Year 2000 Language Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	SPEAK ONLY ENGLISH	LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH[1]							
			SPEAK SPANISH	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER INDO-EUROPEAN LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK ASIAN AND PACIFIC ISLAND LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL
80.03	Kuokoa Street	68%	2%	0.1%	1%	0.1%	29%	11%	0%	0%
87.01	Waipahu Park	51%	0.2%	0%	0.2%	0%	48%	27%	0%	0%
87.02	St. Joseph School	40%	0.5%	0%	1%	0.1%	59%	35%	0%	0%
87.03	Waipahu Intermediate School	52%	1%	0.2%	0.1%	0.1%	47%	20%	0.4%	0%
88	Waipahu-Mauka	47%	0%	0%	0.2%	0%	52%	29%	0.1%	0.1%
89.13	Robinson Heights	69%	0%	0%	0%	0%	31%	19%	0%	0%
89.14	Punawai	47%	2%	2%	0.4%	0.1%	51%	26%	0%	0%
89.21	Seaview-Crestview	67%	1%	0%	0%	0%	32%	15%	0%	0%
III. Aloha Stadium to Middle Street										
66	Kahauiki	82%	13%	3%	1%	0%	3%	0%	0.4%	0%
67.01	Tripler	77%	2%	0%	0.4%	0%	20%	9%	0.1%	0%
68.02	Aliamanu	49%	2%	0%	1%	0.1%	48%	26%	0.1%	0%
68.03	Mapunapuna	21%	0%	0%	0%	0%	79%	17%	0%	0%
68.05	Salt Lake-East	64%	2%	1%	0.4%	0%	34%	16%	0%	0%
68.06	Salt Lake-West	80%	2%	1%	0.2%	0.2%	18%	9%	0%	0%
68.08	Ala Ilima High Rise-Mauka	53%	3%	1%	1%	0%	42%	24%	0.4%	0.2%
68.09	Ala Ilima High Rise-Makai	55%	0.2%	0%	0.2%	0%	43%	28%	1%	0.4%
69	Radford	84%	4%	1%	1%	0%	11%	4%	0.2%	0%
70	Makalapa	78%	5%	1%	1%	0.2%	15%	6%	0.3%	0%
71	Ohana Nui	81%	8%	3%	2%	0.2%	9%	3%	0%	0%
72	Airport	83%	7%	1%	4%	1%	6%	2%	0%	0%

Table B-2: Year 2000 Language Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	SPEAK ONLY ENGLISH	LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH[1]							
			SPEAK SPANISH	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER INDO-EUROPEAN LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK ASIAN AND PACIFIC ISLAND LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL
74	Pearl Harbor	81%	7%	3%	3%	1%	8%	4%	1%	0%
75.04	Aloha Stadium	70%	0.3%	0%	0.5%	0.2%	29%	17%	0%	0%
75.05	Foster Village	63%	2%	0%	0.2%	0%	36%	18%	0%	0%
IIV. Middle Street to Iwilei										
53	Aala	37%	3%	1%	0.1%	0%	61%	46%	0%	0%
54	Mayor Wright Housing	25%	0%	0%	2%	1%	72%	55%	1%	1%
55	Palama	30%	1%	0%	1%	0%	69%	43%	0%	0%
56	Kapalama	37%	0.3%	0%	1%	1%	61%	37%	0%	0%
57	Iwilei-Anuenue	60%	2%	0%	3%	1%	34%	19%	2%	1%
58	Waiakamilo	43%	0%	0%	1%	1%	56%	35%	0.3%	0.3%
59	Mokauea	49%	0.3%	0%	1%	0.3%	50%	33%	0%	0%
60	Kalihi Kai	40%	1%	0%	0.4%	0%	59%	38%	0.2%	0.1%
61	Kalihi Waena	43%	1%	1%	0%	0%	56%	33%	0%	0%
62.01	Kam IV	41%	0.4%	0%	0.4%	0.4%	58%	36%	0.2%	0%
V. Iwilei to UH Manoa										
18.01	Koa Avenue	52%	6%	2%	7%	2%	34%	24%	1%	2%
18.02	Jefferson School	60%	5%	1%	3%	1%	31%	15%	1%	1%
19.01	Waikiki Beach	78%	1%	0%	5%	0%	15%	12%	2%	0%
19.02	Ena Road	64%	1%	0%	4%	1%	30%	18%	1%	0%
20.01	Seaside Avenue	52%	2%	2%	3%	0.3%	43%	26%	0.5%	2%
20.02	Olohana Street	57%	1%	1%	4%	1%	36%	19%	2%	1%
21	Olokele Avenue	58%	1%	0%	2%	1%	40%	18%	0.1%	0%
22	Kamoku Street	57%	1%	0%	3%	1%	39%	19%	0%	0%

Table B-2: Year 2000 Language Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	SPEAK ONLY ENGLISH	LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH[1]							
			SPEAK SPANISH	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER INDO-EUROPEAN LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK ASIAN AND PACIFIC ISLAND LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL	SPEAK OTHER LANGUAGES	SPEAK ENGLISH LESS THAN VERY WELL
23	Moiliili	60%	1%	0%	3%	1%	35%	23%	0%	0%
24.01	Upper McCully	56%	2%	0%	1%	0%	41%	20%	0%	0%
24.02	Lower McCully	53%	1%	0%	0.1%	0%	46%	26%	0%	0%
25	Pawaa	63%	2%	1%	1%	0%	35%	22%	0%	1%
26	Bingham Tract	62%	0.3%	0%	1%	1%	36%	21%	1%	0%
27.01	University	69%	1%	0%	3%	1%	26%	12%	1%	0%
27.02	Punahou	69%	1%	0%	1%	0.1%	29%	16%	0%	0%
35	Kaahumanu School	54%	1%	0%	1%	0.4%	43%	27%	0%	0%
36.01	Sheridan Street	60%	2%	1%	2%	0%	36%	21%	0%	1%
36.02	Kaheka Street	41%	1%	0%	1%	0.3%	56%	37%	1%	0%
37	Ala Moana	58%	2%	0%	3%	0.4%	36%	24%	0.2%	0%
38	Kakaako	61%	2%	0%	2%	0%	34%	20%	1%	0%
39	Civic Circle	70%	1%	0%	0.5%	0%	28%	10%	0%	0%
40	Central Business District	69%	2%	0%	3%	1%	26%	16%	0%	0%
41	Queen's Hospital	60%	1%	0%	2%	0.4%	37%	21%	0%	0%
42	Queen Emma Gardens	66%	1%	0%	3%	1%	30%	19%	1%	0%
51	Foster Botanic Garden	35%	0.4%	0%	2%	1%	62%	44%	0.2%	0%
52	Chinatown	32%	2%	0%	2%	1%	63%	46%	1%	0%

Notes: *For population 5 years and over

Source: City and County of Honolulu, Department of Planning and Permitting. Community Profiles by Development Plan Area: 2000, May 2003.
U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder
<http://factfinder.census.gov/servlet/DatasetMainPageServlet?> Accessed March 1, 2005.

Table B-3: Year 2000 Income and Employment Characteristics by Census Tract

CENSUS TRACT	NAME	HOUSEHOLDS	INCOME OF HOUSEHOLD			BELOW POVERTY LEVEL (INDIVIDUALS)	BELOW 125% POVERTY LEVEL (INDIVIDUALS)	SELECTED INCOME SOURCE OF HOUSEHOLD			POPULATION 16 YEARS AND OVER	CIVILIAN	EMPLOYMENT STATUS	
			MEDIAN INCOME	LOWER THAN $15,000	HIGHER THAN $75,000			SOCIAL SECURITY	RETIREMENT	PUBLIC ASSISTANCE			EMPLOYED	UNEMPLOYED
Oahu		286,731	$51,914	11%	32%	10%	13%	27%	22%	7%	691,015	59%	55%	4%
Managed Lanes Alternative														
57	Iwilei-Anuenue	581	$16705	44%	3%	41%	49%	22%	18%	24%	1383	51%	35%	17%
58	Waiakamilo	1,012	$28210	25%	9%	25%	33%	29%	11%	22%	2468	57%	51%	6%
59	Mokauea	752	$35000	17%	15%	18%	26%	26%	14%	10%	1785	69%	63%	6%
66	Kahauiki	449	$42462	1%	23%	5%	10%	1%	3%	4%	1225	30%	27%	4%
68.03	Mapunapuna	0	0	0%	0%	50%	60%	0%	0%	0%	22	41%	41%	0%
69	Radford	1,052	$41881	3%	12%	2%	6%	2%	1%	1%	2268	32%	30%	2%
70	Makalapa	1,118	$37045	5%	7%	4%	6%	2%	2%	2%	2284	33%	29%	4%
71	Ohana Nui	596	$37115	2%	9%	5%	12%	3%	4%	1%	1265	33%	31%	2%
72	Airport	193	$41771	3%	15%	5%	8%	0%	0%	0%	780	16%	16%	0%
74	Pearl Harbor	336	$51667	4%	38%	1%	2%	8%	5%	2%	1953	15%	13%	2%
75.04	Aloha Stadium	815	$31920	31%	17%	28%	36%	35%	20%	23%	2103	56%	50%	6%
77.01	Lower Aiea	1,175	$59861	6%	38%	8%	9%	49%	38%	5%	3265	55%	52%	3%
78.08	Pearl Ridge Center	1,030	$43000	7%	19%	12%	17%	22%	18%	10%	2447	60%	56%	4%
80.01	Hale Mohalu	710	$29375	29%	9%	16%	17%	42%	22%	10%	1590	51%	47%	3%
80.02	Kula Drive	842	$58636	8%	35%	5%	10%	59%	51%	5%	2312	51%	49%	2%
80.03	Kuokoa Street	1,582	$37794	12%	17%	9%	13%	19%	12%	9%	3402	62%	57%	4%
87.01	Waipahu Park	1,747	$59464	9%	36%	10%	13%	46%	35%	9%	6307	55%	51%	4%
88	Waipahu-Mauka	1,450	$56518	19%	36%	13%	16%	43%	25%	16%	5462	60%	55%	5%
89.21	Seaview-Crestview	560	$73810	0%	48%	4%	4%	38%	34%	6%	1950	68%	63%	5%

Table B-3: Year 2000 Income and Employment Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSEHOLDS	INCOME OF HOUSEHOLD			BELOW POVERTY LEVEL (INDIVIDUALS)	BELOW 125% POVERTY LEVEL (INDIVIDUALS)	SELECTED INCOME SOURCE OF HOUSEHOLD			POPULATION 16 YEARS AND OVER	CIVILIAN	EMPLOYMENT STATUS	
			MEDIAN INCOME	LOWER THAN $15,000	HIGHER THAN $75,000			SOCIAL SECURITY	RETIREMENT	PUBLIC ASSISTANCE			EMPLOYED	UNEMPLOYED
Fixed Guideway Alternative														
I. Kapolei to Fort Weaver Road														
84.01	Ewa Gentry-East	942	$62813	3%	38%	3%	3%	6%	10%	7%	2249	78%	75%	3%
84.03	Ocean Pointe	692	$75938	1%	52%	1%	4%	8%	10%	9%	1692	70%	69%	1%
84.04	Ewa Gentry-West	2,921	$60035	3%	32%	3%	4%	8%	7%	4%	6397	71%	68%	3%
85	Barbers Point	397	$34281	3%	5%	4%	5%	3%	0%	2%	768	24%	20%	4%
86.03	Kahe	3,066	$65538	3%	37%	5%	7%	13%	17%	5%	7143	73%	69%	3%
86.04	Makakilo	1,028	$70531	4%	40%	4%	9%	32%	38%	12%	3050	64%	59%	5%
86.05	East Kapolei-Ewa Villages	2,237	$53363	10%	28%	6%	9%	28%	23%	7%	6395	59%	56%	4%
86.06	Villages of Kapolei-North	1,945	$67370	3%	41%	3%	6%	10%	11%	4%	4819	77%	73%	3%
86.07	Villages of Kapolei-South	441	61023	4%	34%	2%	2%	9%	4%	3%	1019	78%	72%	6%
86.09	Ko Olina Expansion	556	74063	4%	49%	10%	11%	30%	27%	10%	1405	65%	64%	1%
II. Fort Weaver Road to Aloha Stadium														
77.01	Lower Aiea	1,175	59861	6%	38%	8%	9%	49%	38%	5%	3265	55%	52%	3%
78.08	Pearl Ridge Center	1,030	43000	7%	19%	12%	17%	22%	18%	10%	2447	60%	56%	4%
80.01	Hale Mohalu	710	29375	29%	9%	16%	17%	42%	22%	10%	1590	51%	47%	3%
80.02	Kula Drive	842	58636	8%	35%	5%	10%	59%	51%	5%	2312	51%	49%	2%
80.03	Kuokoa Street	1,582	37794	12%	17%	9%	13%	19%	12%	9%	3402	62%	57%	4%
87.01	Waipahu Park	1,747	59464	9%	36%	10%	13%	46%	35%	9%	6307	55%	51%	4%
87.02	St. Joseph School	1,177	39438	24%	26%	15%	20%	46%	29%	14%	3476	51%	47%	4%
87.03	Waipahu Intermediate School	1,508	36250	15%	19%	22%	30%	20%	11%	21%	4043	58%	50%	8%

Table B-3: Year 2000 Income and Employment Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSEHOLDS	INCOME OF HOUSEHOLD			BELOW POVERTY LEVEL (INDIVIDUALS)	BELOW 125% POVERTY LEVEL (INDIVIDUALS)	SELECTED INCOME SOURCE OF HOUSEHOLD			POPULATION 16 YEARS AND OVER	CIVILIAN	EMPLOYMENT STATUS	
			MEDIAN INCOME	LOWER THAN $15,000	HIGHER THAN $75,000			SOCIAL SECURITY	RETIREMENT	PUBLIC ASSISTANCE			EMPLOYED	UNEMPLOYED
88	Waipahu-Mauka	1,450	56518	19%	36%	13%	16%	43%	25%	16%	5462	60%	55%	5%
89.13	Robinson Heights	806	61346	2%	37%	5%	9%	45%	47%	11%	2965	58%	52%	7%
89.14	Punawai	1,117	39931	13%	9%	13%	26%	22%	15%	24%	2949	64%	58%	6%
89.21	Seaview-Crestview	560	73810	0%	48%	4%	4%	38%	34%	6%	1950	68%	63%	5%
III. Aloha Stadium to Middle Street														
66	Kahauiki	449	42462	1%	23%	5%	10%	1%	3%	4%	1225	30%	27%	4%
67.01	Tripler	1,885	70236	4%	47%	4%	5%	58%	50%	3%	5385	46%	44%	2%
68.02	Aliamanu	1,494	57750	8%	32%	8%	10%	35%	29%	10%	5013	61%	56%	5%
68.03	Mapunapuna	0	0	0%	0%	50%	60%	0%	0%	0%	22	41%	41%	0%
68.05	Salt Lake-East	2,175	59980	6%	37%	4%	7%	18%	19%	5%	4764	66%	63%	3%
68.06	Salt Lake-West	492	101159	3%	71%	1%	2%	52%	44%	3%	1522	58%	56%	2%
68.08	Ala Ilima High Rise-Mauka	1,983	42290	8%	18%	8%	12%	14%	12%	4%	3812	73%	69%	3%
68.09	Ala Ilima High Rise-Makai	1,884	40633	13%	15%	12%	19%	16%	13%	4%	3965	65%	63%	2%
69	Radford	1,052	41881	3%	12%	2%	6%	2%	1%	1%	2268	32%	30%	2%
70	Makalapa	1,118	37045	5%	7%	4%	6%	2%	2%	2%	2284	33%	29%	4%
71	Ohana Nui	596	37115	2%	9%	5%	12%	3%	4%	1%	1265	33%	31%	2%
72	Airport	193	41771	3%	15%	5%	8%	0%	0%	0%	780	16%	16%	0%
74	Pearl Harbor	336	51667	4%	38%	1%	2%	8%	5%	2%	1953	15%	13%	2%
75.04	Aloha Stadium	815	31920	31%	17%	28%	36%	35%	20%	23%	2103	56%	50%	6%
75.05	Foster Village	1,732	76037	3%	51%	5%	6%	23%	27%	6%	4486	66%	64%	3%

Table B-3: Year 2000 Income and Employment Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSEHOLDS	INCOME OF HOUSEHOLD			BELOW POVERTY LEVEL (INDIVIDUALS)	BELOW 125% POVERTY LEVEL (INDIVIDUALS)	SELECTED INCOME SOURCE OF HOUSEHOLD			POPULATION 16 YEARS AND OVER	CIVILIAN	EMPLOYMENT STATUS	
			MEDIAN INCOME	LOWER THAN $15,000	HIGHER THAN $75,000			SOCIAL SECURITY	RETIREMENT	PUBLIC ASSISTANCE			EMPLOYED	UNEMPLOYED
IV. Middle Street to Iwilei														
53	Aala	1,437	25451	31%	10%	17%	24%	35%	18%	9%	3274	52%	49%	3%
54	Mayor Wright Housing	416	16136	48%	2%	46%	58%	14%	3%	37%	1044	45%	34%	11%
55	Palama	521	31756	31%	17%	16%	27%	32%	22%	14%	1489	56%	52%	3%
56	Kapalama	1,772	36302	24%	24%	12%	16%	47%	25%	13%	4904	52%	50%	2%
57	Iwilei-Anuenue	581	16705	44%	3%	41%	49%	22%	18%	24%	1383	51%	35%	17%
58	Waiakamilo	1,012	28210	25%	9%	25%	33%	29%	11%	22%	2468	57%	51%	6%
59	Mokauea	752	35000	17%	15%	18%	26%	26%	14%	10%	1785	69%	63%	6%
60	Kalihi Kai	1,279	47039	14%	20%	12%	16%	40%	15%	15%	5108	56%	50%	5%
61	Kalihi Waena	763	54191	9%	36%	11%	17%	41%	31%	11%	3123	58%	54%	5%
62.01	Kam IV	1,146	44018	17%	21%	18%	22%	38%	25%	17%	3994	60%	55%	5%
V. Iwilei to UH Manoa														
18.01	Koa Avenue	729	25865	28%	11%	17%	19%	27%	17%	8%	1112	53%	47%	6%
18.02	Jefferson School	2,549	35224	18%	16%	12%	16%	25%	17%	6%	4347	61%	58%	3%
19.01	Waikiki Beach	477	29028	21%	17%	11%	14%	50%	37%	4%	684	39%	38%	1%
19.02	Ena Road	3,296	37018	23%	21%	16%	19%	28%	22%	2%	5237	55%	53%	2%
20.01	Seaside Avenue	2,013	28634	25%	11%	18%	24%	24%	16%	4%	3207	55%	50%	5%
20.02	Olohana Street	2,321	29777	28%	9%	22%	27%	18%	11%	4%	3591	58%	55%	3%
21	Olokele Avenue	1,601	36351	18%	16%	20%	24%	20%	13%	7%	2964	64%	62%	2%
22	Kamoku Street	3,394	39387	15%	18%	14%	17%	17%	11%	6%	5978	67%	63%	4%
23	Moiliili	2,422	34726	18%	11%	11%	18%	21%	14%	6%	4318	66%	60%	5%

Table B-3: Year 2000 Income and Employment Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSEHOLDS	INCOME OF HOUSEHOLD			BELOW POVERTY LEVEL (INDIVIDUALS)	BELOW 125% POVERTY LEVEL (INDIVIDUALS)	SELECTED INCOME SOURCE OF HOUSEHOLD			POPULATION 16 YEARS AND OVER	CIVILIAN	EMPLOYMENT STATUS	
			MEDIAN INCOME	LOWER THAN $15,000	HIGHER THAN $75,000			SOCIAL SECURITY	RETIREMENT	PUBLIC ASSISTANCE			EMPLOYED	UNEMPLOYED
24.01	Upper McCully	1,357	35268	22%	16%	20%	24%	21%	12%	5%	2479	67%	64%	3%
24.02	Lower McCully	1,567	35824	21%	8%	17%	20%	30%	16%	6%	2672	62%	59%	3%
25	Pawaa	1,918	31805	25%	10%	14%	18%	32%	20%	5%	3281	61%	58%	3%
26	Bingham Tract	2,012	33125	23%	14%	17%	21%	26%	17%	10%	3658	58%	56%	3%
27.01	University	782	45500	21%	21%	7%	9%	23%	15%	5%	4269	60%	53%	7%
27.02	Punahou	2,134	42368	17%	25%	14%	18%	23%	14%	3%	4482	67%	65%	2%
35	Kaahumanu School	3,092	33700	23%	16%	16%	20%	33%	26%	5%	5208	52%	48%	4%
36.01	Sheridan Street	1,134	29333	25%	7%	21%	31%	26%	15%	9%	1979	57%	53%	5%
36.02	Kaheka Street	3,006	22087	37%	7%	27%	34%	30%	17%	11%	4537	46%	43%	3%
37	Ala Moana	1,871	40214	15%	24%	19%	21%	23%	19%	3%	3283	56%	54%	2%
38	Kakaako	1,641	34509	27%	24%	19%	26%	32%	19%	8%	2575	54%	50%	4%
39	Civic Circle	296	21667	31%	11%	7%	8%	40%	19%	15%	534	43%	30%	13%
40	Central Business District	724	38300	20%	23%	25%	31%	10%	11%	4%	1312	68%	61%	7%
41	Queen's Hospital	2,221	31393	23%	12%	17%	23%	24%	13%	7%	4034	55%	52%	3%
42	Queen Emma Gardens	1,587	34976	25%	13%	47%	50%	24%	19%	2%	3271	68%	42%	26%
51	Foster Botanic Garden	1,527	33583	34%	25%	25%	30%	20%	9%	14%	2755	50%	47%	3%
52	Chinatown	1,496	19606	38%	6%	23%	31%	25%	9%	12%	2673	51%	48%	4%

Notes: [1] In 1999 dollars.

Source: City and County of Honolulu, Department of Planning and Permitting. Community Profiles by Development Plan Area: 2000, May 2003.
U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder
<http://factfinder.census.gov/servlet/DatasetMainPageServlet?> Accessed March 1, 2005.

Table B-4: Year 2000 Housing Characteristics by Census Tract

CENSUS TRACT	NAME	HOUSING UNITS	TENURE[1]		YEAR STRUCTURE BUILT		UNITS IN STRUCTURE		
			OWNER-OCCUPPIED	RENTER-OCCUPIED	1 TO 10 YEARS	11 YEARS OR MORE	1 UNIT	2 TO 4 UNITS	5 OR MORE UNITS
Oahu		315,988	49%	41%	15%	85%	55%	7%	38%
Managed Lanes Alternative									
57	Iwilei-Anuenue	713	2%	76%	1%	99%	1%	6%	93%
58	Waiakamilo	1,081	36%	60%	20%	80%	10%	8%	81%
59	Mokauea	858	16%	67%	1%	99%	19%	30%	47%
66	Kahauiki	629	2%	69%	0%	100%	44%	45%	11%
68.03	Mapunapuna	0	0%	0%	0%	0%	0%	0%	0%
69	Radford	1,163	0%	89%	18%	82%	79%	19%	2%
70	Makalapa	1,265	1%	87%	60%	39%	83%	10%	7%
71	Ohana Nui	607	1%	99%	3%	97%	43%	26%	31%
72	Airport	183	3%	97%	55%	45%	83%	17%	0%
74	Pearl Harbor	599	11%	48%	32%	68%	85%	9%	1%
75.04	Aloha Stadium	850	35%	60%	3%	97%	32%	13%	56%
77.01	Lower Aiea	1,198	60%	37%	6%	94%	87%	5%	8%
78.08	Pearl Ridge Center	1,148	37%	55%	7%	94%	30%	5%	65%
80.01	Hale Mohalu	662	29%	68%	29%	71%	39%	12%	48%
80.02	Kula Drive	877	74%	22%	2%	98%	88%	4%	8%
80.03	Kuokoa Street	1,718	29%	63%	2%	98%	38%	10%	53%
87.01	Waipahu Park	1,800	62%	34%	6%	94%	84%	5%	11%
88	Waipahu-Mauka	1,464	67%	32%	3%	96%	82%	4%	13%
89.12	August Ahrens School	517	77%	21%	4%	96%	95%	5%	0%
89.20	Waipio Gentry Industrial-Koa Ridge	1,696	61%	35%	19%	81%	54%	12%	34%
89.21	Seaview-Crestview	568	80%	20%	23%	77%	95%	5%	0%
89.22	Waikele	2,737	78%	16%	98%	2%	50%	9%	40%

Table B-4: Year 2000 Housing Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSING UNITS	TENURE[1]		YEAR STRUCTURE BUILT		UNITS IN STRUCTURE		
			OWNER-OCCUPPIED	RENTER-OCCUPIED	1 TO 10 YEARS	11 YEARS OR MORE	1 UNIT	2 TO 4 UNITS	5 OR MORE UNITS
Fixed Guideway Alternative									
I. Kapolei to Fort Weaver Road									
84.01	Ewa Gentry-East	969	89%	2%	98%	1%	90%	7%	4%
84.03	Ocean Pointe	726	91%	5%	98%	1%	93%	1%	6%
84.04	Ewa Gentry-West	3,186	62%	31%	78%	22%	42%	9%	49%
85	Barbers Point	626	0.3%	59%	33%	67%	86%	12%	1%
86.03	Kahe	3,277	60%	33%	32%	67%	55%	11%	34%
86.04	Makakilo	1,058	77%	20%	4%	96%	98%	2%	1%
86.05	East Kapolei-Ewa Villages	2,430	71%	23%	66%	34%	80%	1%	18%
86.06	Villages of Kapolei-North	2,005	84%	13%	96%	4%	77%	1%	22%
86.07	Villages of Kapolei-South	503	82%	6%	100%	0%	72%	7%	20%
86.09	Ko Olina Expansion	593	67%	19%	42%	58%	60%	14%	26%
II. Fort Weaver Road to Aloha Stadium									
77.01	Lower Aiea	1,198	60%	37%	6%	94%	87%	5%	8%
78.08	Pearl Ridge Center	1,148	37%	55%	7%	94%	30%	5%	65%
80.01	Hale Mohalu	662	29%	68%	29%	71%	39%	12%	48%
80.02	Kula Drive	877	74%	22%	2%	98%	88%	4%	8%
80.03	Kuokoa Street	1,718	29%	63%	2%	98%	38%	10%	53%
87.01	Waipahu Park	1,800	62%	34%	6%	94%	84%	5%	11%
87.02	St. Joseph School	1,251	37%	57%	24%	76%	59%	7%	34%
87.03	Waipahu Intermediate School	1,699	33%	57%	29%	70%	39%	6%	54%
88	Waipahu-Mauka	1,464	67%	32%	3%	96%	82%	4%	13%
89.13	Robinson Heights	829	86%	12%	5%	95%	97%	1%	1%
89.14	Punawai	1,242	29%	62%	4%	96%	14%	28%	58%
89.21	Seaview-Crestview	568	80%	20%	23%	77%	95%	5%	0%

Table B-4: Year 2000 Housing Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSING UNITS	TENURE[1]		YEAR STRUCTURE BUILT		UNITS IN STRUCTURE		
			OWNER-OCCUPPIED	RENTER-OCCUPIED	1 TO 10 YEARS	11 YEARS OR MORE	1 UNIT	2 TO 4 UNITS	5 OR MORE UNITS
III. Aloha Stadium to Middle Street									
66	Kahauiki	629	2%	69%	0%	100%	44%	45%	11%
67.01	Tripler	1,942	77%	20%	1%	99%	90%	5%	5%
68.02	Aliamanu	1,509	60%	36%	6%	94%	81%	10%	9%
68.03	Mapunapuna	0	0%	0%	0%	0%	0%	0%	0%
68.05	Salt Lake-East	2,323	64%	30%	30%	70%	25%	2%	74%
68.06	Salt Lake-West	543	91%	8%	2%	98%	97%	3%	0%
68.08	Ala Ilima High Rise-Mauka	2,084	41%	55%	1%	99%	3%	3%	94%
68.09	Ala Ilima High Rise-Makai	2,024	37%	56%	2%	98%	0.4%	3%	96%
69	Radford	1,163	0%	89%	18%	82%	79%	19%	2%
70	Makalapa	1,265	1%	87%	60%	39%	83%	10%	7%
71	Ohana Nui	607	1%	99%	3%	97%	43%	26%	31%
72	Airport	183	3%	97%	55%	45%	83%	17%	0%
74	Pearl Harbor	599	11%	48%	32%	68%	85%	9%	1%
75.04	Aloha Stadium	850	35%	60%	3%	97%	32%	13%	56%
75.05	Foster Village	1,789	65%	32%	6%	93%	67%	7%	26%
IV. Middle Street to Iwilei									
53	Aala	1,506	13%	83%	3%	98%	6%	5%	89%
54	Mayor Wright Housing	417	0%	95%	13%	86%	7%	8%	83%
55	Palama	607	30%	59%	5%	94%	37%	4%	56%
56	Kapalama	1,927	37%	58%	12%	88%	45%	13%	42%
57	Iwilei-Anuenue	713	2%	76%	1%	99%	1%	6%	93%
58	Waiakamilo	1,081	36%	60%	20%	80%	10%	8%	81%
59	Mokauea	858	16%	67%	1%	99%	19%	30%	47%
60	Kalihi Kai	1,350	32%	63%	3%	96%	40%	23%	36%
61	Kalihi Waena	797	47%	48%	5%	95%	86%	6%	8%

Table B-4: Year 2000 Housing Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSING UNITS	TENURE[1]		YEAR STRUCTURE BUILT		UNITS IN STRUCTURE		
			OWNER-OCCUPPIED	RENTER-OCCUPIED	1 TO 10 YEARS	11 YEARS OR MORE	1 UNIT	2 TO 4 UNITS	5 OR MORE UNITS
62.01	Kam IV	1,228	43%	51%	6%	94%	57%	11%	31%
V. Iwilei to UH Manoa									
18.01	Koa Avenue	1,096	12%	56%	1%	99%	1%	1%	98%
18.02	Jefferson School	4,506	18%	40%	1%	99%	2%	2%	96%
19.01	Waikiki Beach	1,666	12%	14%	1%	99%	0.4%	1%	94%
19.02	Ena Road	4,564	29%	43%	0.4%	100%	0.4%	2%	98%
20.01	Seaside Avenue	3,331	19%	43%	0.4%	100%	2%	1%	97%
20.02	Olohana Street	3,208	22%	49%	7%	93%	2%	2%	96%
21	Olokele Avenue	1,759	26%	65%	2%	97%	11%	19%	70%
22	Kamoku Street	3,853	31%	57%	1%	99%	3%	6%	91%
23	Moiliili	2,713	29%	61%	1%	99%	5%	10%	85%
24.01	Upper McCully	1,467	16%	76%	8%	93%	11%	24%	65%
24.02	Lower McCully	1,664	26%	68%	4%	96%	9%	18%	73%
25	Pawaa	2,155	21%	68%	8%	92%	15%	16%	70%
26	Bingham Tract	2,246	23%	67%	4%	96%	14%	8%	78%
27.01	University	857	31%	61%	15%	86%	40%	13%	47%
27.02	Punahou	2,270	40%	54%	8%	92%	37%	7%	56%
35	Kaahumanu School	3,370	33%	59%	27%	72%	4%	5%	91%
36.01	Sheridan Street	1,295	12%	77%	9%	91%	11%	14%	74%
36.02	Kaheka Street	3,285	25%	66%	0.2%	100%	1%	3%	96%
37	Ala Moana	2,802	30%	37%	43%	56%	1%	1%	98%
38	Kakaako	1,916	30%	56%	71%	29%	1%	1%	98%
39	Civic Circle	300	31%	65%	81%	19%	4%	0%	96%
40	Central Business District	975	21%	62%	33%	66%	5%	0%	95%
41	Queen's Hospital	2,371	26%	67%	7%	93%	7%	7%	86%
42	Queen Emma Gardens	1,521	31%	65%	1%	100%	1%	0.5%	99%

Table B-4: Year 2000 Housing Characteristics by Census Tract (Continued)

CENSUS TRACT	NAME	HOUSING UNITS	TENURE[1]		YEAR STRUCTURE BUILT		UNITS IN STRUCTURE		
			OWNER-OCCUPPIED	RENTER-OCCUPIED	1 TO 10 YEARS	11 YEARS OR MORE	1 UNIT	2 TO 4 UNITS	5 OR MORE UNITS
51	Foster Botanic Garden	1,585	27%	70%	23%	77%	3%	2%	94%
52	Chinatown	1,616	2%	90%	34%	66%	2%	3%	94%

Notes: [1] Tenure does not add to 100% because some properties are vacant.

Source: City and County of Honolulu, Department of Planning and Permitting. Community Profiles by Development Plan Area: 2000, May 2003.
U.S. Census Bureau, Census 2000 Summary Files 1 (SF 1) and 3 (SF 3). 2000. American Factfinder
<http://factfinder.census.gov/servlet/DatasetMainPageServlet?> Accessed March 1, 2005.

Appendix C Facilities

This appendix lists the public service and community facilities located in the study corridor. The locations of these facilities are shown in Figure 4-9 and Figure 4-10 in the *Public Services and Community Facilities* section of this report.

Fire Stations

The following fire battalions and stations provide fire protection services within the study area.

Battalion 1

- #1 Central Fire Station (Headquarters) – 104 S. Beretania St., Honolulu
- #6 Kalihi Fire Station – 1742 N. King St., Honolulu
- Waterfront Fire Station – 111 N. Nimitz Hwy., Pier 15
- #9 Kaka'ako Fire Station – 555 Queen St., Honolulu
- #31 Kalihi Kai Fire Station – 1334 Nimitz Hwy., Honolulu (Section 5)

Battalion 2

- #2 Pāwa'a Fire Station – 1610 Makaloa St., Honolulu
- #7 Waikīkī Fire Station (Headquarters) – 381 Kapahulu Ave., Waikīkī
- #29 McCully Fire Station – 2425 Date St., Honolulu

Battalion 4

- #12 Waipahu Fire Station – 94-121 Leonui St., Waipahu (Section 2)
- #40 Kapolei Fire Station – 2020 Lauwiliwili Ave., Kapolei (Section 1)

Battalion 5

- #8 Mokulele Fire Station – 890 Valkenburgh St., Honolulu
- #10 'Aiea Fire Station – 98-1239 Ulune St., 'Aiea (Section 2)
- #20 Pearl City Fire Station – 886 First St., Pearl City (Section 2)
- #30 Moanahua Fire Station – 2835 Ala Ilima St., Honolulu (Section 3)

Police Stations

The following police bureaus and stations provide police services within the study area.

Central and Regional Patrol Bureaus:

- District 1 – Central Honolulu, 801 S. Beretania
- District 3 – 1100 Waimano Home Rd. (Pearl City Police Station)
- District 5 – 1865 Kamehameha IV Rd., Kalihi
- District 6 – 2405 Kalākaua Ave., Waikīkī

- District 8 – Kapolei/Wai‘anae 1100 Kamokila Blvd., Kapolei (Honolulu Police Department)

Police stations:

- Waikīkī Police Station – 2201 Kalākaua Ave., Honolulu
- Kalihi City Police Station – 1865 Kamehameha IV Rd., Honolulu
- Waikīkī City Police Station – 2425 Kalākaua Ave., Honolulu
- Waipahu Police Department (District 3 Substation) – 94-144 Farrington Hwy., Waipahu
- Honolulu Police Patrol – 801 S. Beretania St., Honolulu
- Honolulu City Police Department (District 1 Substation) – 79 N. Hotel St., Honolulu

Hospitals and Medical Facilities

Table C-1 lists the hospitals and medical facilities located within the study corridor.

Table C-1. Hospitals and Medical Facilities

I. Kapolei to Fort Weaver Road	
Kahi Mohala Behavioral Health 91-2301 Fort Weaver Rd., ‘Ewa Beach	Leeward Dialysis 91-2137 Fort Weaver Rd., ‘Ewa Beach
Kapolei Medical Park 599 Farrington Hwy., Kapolei	St Francis Medical Center West 91-2141 Fort Weaver Rd., ‘Ewa Beach
Ka Punawai Ola 91-575 Farrington Hwy., Kapolei	
II. Fort Weaver Road to Aloha Stadium	
Family Practice Center Pearlridge Theater Center 98-151 Pali Momi St., ‘Aiea	Pearl City Nursing Home 919 Lehua Ave., Pearl City
Kapi‘olani Medical Center at Pali Momi 98-1079 Moanalua Rd., ‘Aiea	Straub Pearlridge Clinic 98-151 Pali Momi St., ‘Aiea
III. Aloha Stadium to Middle Street	
Concentra Medical Centers – HI 545 Ohohia St., Honolulu	Malama Ohana Skilled Nursing Facility 3288 Moanalua Rd., Honolulu
Branch Medical Clinic Makalapa Bldg.1407 Makalapa Rd., Pearl Harbor	Naval Medical Clinic Pearl Harbor 480 Central Ave., Pearl Harbor
Branch Medical Clinic Pearl Harbor Naval Shipyard Bldg. 1750 Central Ave., Pearl Harbor	Tripler Army Medical Center 1 Jarrett White Rd., Honolulu
Hickam AFB (15th Medical Group) 755 Scott Cir., Hickam AFB	VA Medical Center Honolulu 459 Patterson Rd., Honolulu

Table C-1. Hospitals and Medical Facilities (Continued)

IV. Middle Street to Iwilei	
Kaiser Moanalua Hospital 3288 Moanalua Rd, Honolulu	
Beverly Manor Honolulu 1930 Kamehameha IV Rd., Honolulu	Liliha Healthcare Center 1814 Liliha St., Honolulu
Convalescent Center of Honolulu 1900 Bachelot St., Honolulu	Maluhia 1027 Hala Dr., Honolulu
Hospice Hawai‘i 860 Iwilei Rd., Honolulu	Nu‘uanu Hale Hospital 2900 Pali Hwy., Honolulu
Kuakini Health System 347 N Kuakini St., Honolulu	Prime Care Services Hawai‘i, Inc. 1650 Liliha St., Honolulu
Kuakini Medical Center Hale Pulama Mau Building 347 North Kuakini St., Honolulu	Rehabilitation Hospital of the Pacific 226 N Kuakini St., Honolulu
Kuakini Medical Plaza 321 N. Kuakini St., Honolulu	Siemsen Dialysis St. Francis Medical Center 2226 Liliha St., Honolulu
Kuakini Physicians Tower 405 N. Kuakini St., Honolulu	Total Renal Care 226 North Kuakini St., Honolulu
Section V. Iwilei to UH Mānoa	
Aesthetica Plastic & Laser Surgery Ctr 600 Kapi‘olani Blvd., Honolulu	Kapi‘olani Hospital 1319 Punahou St., Honolulu
Arcadia Retirement Residence 1434 Punahou St., Honolulu	Kapi‘olani Medical Center for Women & Children 1319 Punahou St., Honolulu
Cancer Research Center of Hawai‘i 1236 Lauhala St., Honolulu	Lē‘ahi Hospital 3675 Kilauea Ave., Honolulu
CareResource Hawai‘i 702 S. Beretania St., Honolulu	Makalapa Naval Medical Clinic Bldg 1407 Makalapa Rd., Pearl Harbor
Family Practice Center – McCully 2016 S. King St., Honolulu	O‘ahu Care Facility 1808 S. Beretania St., Honolulu
Hale Nani Rehab and Nursing Center 1677 Pensacola St., Honolulu	Ronald McDonald House Charities of Hawai‘i 1970 Judd Hillside Rd., Honolulu
Hale Ola Kino 1314 Kalākaua Ave., Honolulu	Shriner’s Hospital 1310 Punahou St., Honolulu
Hawai‘i Continuing and Elderly Care Services 250 S. Hotel St., Honolulu	St Francis Medical Center – Liliha 2230 Liliha St., Honolulu
Hawai‘i Department of Health 1250 Punchbowl St., Honolulu	Straub Beretania Family Health Center 839 South Beretania St., Honolulu

Table C-1. Hospitals and Medical Facilities (Continued)

Section V. Iwilei to UH Mānoa (Continued)	
Hawai'i Health Systems Corporation 3675 Kilauea Ave., Honolulu	Straub Clinic & Hospital 888 King St., Honolulu
Hawai'i Medical Service Association 818 Ke'eaumoku St., Honolulu	Straub King Street Main Clinic Hospital 888 South King St., Honolulu
HealthSouth Rehab Ctr Honolulu 550 South Beretania St., Honolulu	Straub Mililani Family Health Center 95-1249 Meheula Pkwy., Mililani
Honolulu Shriners Hospital 1310 Punahou St., Honolulu	The Queens Medical Center 1301 Punchbowl St., Honolulu
Island Nursing Home – Honolulu 1205 Alexander St., Honolulu	University of Hawai'i at Mānoa Tropical Medicine 2540 Maile Wy., Honolulu

Source: *www.hospitalsoup.com* and *www.enterprisehonoulu.com*

Schools

Table C-2 lists the schools located within the study corridor.

Table C-2. Schools

I. Kapolei to Fort Weaver Road		
Barbers Point Elementary	Kapolei Elementary	Lanikila Baptist
'Ewa Elementary	Kapolei High	Makakilo Elementary
Holomua Elementary	Kapolei Middle	
II. Fort Weaver Road to Aloha Stadium		
Aiea High	Lanakila Elementary	St. Joseph
Alvah A Scott Elementary	Leeward Community College	Waiau Elementary
August Ahrens Elementary	Lehua Elementary	Waikele Elementary
Highlands Intermediate	Mānana Elementary	Waimalu Elementary
Honowai Elementary	Pearl City Elementary	Waipahu Elementary
Kaleiopuu Elementary	Pearl City Highlands Elementary	Waipahu Intermediate
Kanoelani Elementary	Pearl Ridge Elementary	Waipahu High
III. Aloha Stadium to Middle Street		
Aiea Elementary	Makalapa Elementary	Pearl Harbor Elementary
Aiea Intermediate	Moanalua Elementary	Pearl Harbor Kai Elementary
Āliamanu Elementary	Moanalua High	Radford High
Āliamanu Intermediate	Moanalua Middle	Salt Lake Elementary
Elizabeth	Mokulele Elementary	Shafter Elementary
Hale Keiki	Nimitz Chester W. Elementary	Webling Elementary
IV. Middle Street to Iwilei		
Damien High	Kalākaua Intermediate	Likelike Elementary

Table C-3. Schools (Continued)

IV. Middle Street to Iwilei (Continued)		
Dole Middle	Kalihi Kai Elementary	Linapuni Elementary
Farrington High	Kalihi Waena Elementary	Pu'uhale Elementary
Fern Elementary	Kalulani	St. Anthony
Honolulu Community College	Kapālama Elementary	St. Theresa
Kaewai Elementary	Kauluwela Elementary	
Ka'iulani Elementary	Lanakila Elementary	
V. Iwilei to UH Mānoa		
Ala Wai Elementary	Kaimukī High	Roosevelt High
Ali'iōlani Elementary	Kapi'olani Community College	Royal Elementary
Bingham Tract	Kawananakoa Middle	Saint Andrew Priory
Central Intermediate	Koahumanu	Stevenson Middle
Diamond Head School for Deaf	Kūhiō Elementary	Thomas Jefferson
Haw Mission Academy	Lincoln Elementary	University of Hawai'i Mānoa
Hawai'i Center for the Deaf & Blind	Lunalilo Elementary	University High
Hokulani Elementary	Mary Knoll High	Waikīkī Elementary
Iolani	McKinley High	Washington Middle
Jefferson Elementary	Memorial Methodist	
Ka'ahumanu Elementary	Noelani Elementary	

Source: *http://doe.k12.hi.us*

Libraries

Table C-4 lists the libraries located within the study corridor.

Table C-4. Libraries

I. Kapolei to Fort Weaver Road	
Kapolei, 1020 Manawai St.	
II. Fort Weaver Road to Aloha Stadium	
Aiea, 99-143 Moanalua Rd.	Waipahu, 94-275 Mokuola St.
Pearl City, 21138 Waimano Home Rd.	
III. Aloha Stadium to Middle Street	
Salt Lake, 3225 Salt Lake Blvd.	
IV. Middle Street to Iwilei	
Kalihi – Pālama, 1325 Kalihi St.	Liliha, 1515 Liliha St. 96817
V. Iwilei to UH Mānoa	
Hawai'i State Library, 478 S. King St	McCully – Mo'ili'ili, 2211 S. King St
Kaimukī, 1041 Koko Head Ave	Waikīkī – Kapahulu, 400 Kapahulu Ave.
LBPH, 402 Kapahulu Ave	

Source: *www.hcc.hawaii.edu/hspls/liblist.html*

Cultural Sites

Table C-5 lists the cultural sites located within the study corridor.

Table C-5. Cultural Sites

I. Kapolei to Fort Weaver Road – Churches	
Anuenue Christian Reform Church (‘Ewa Beach)	Immaculate Conception Church
Calvary Chapel West O‘ahu	Iokahi Baptist Church
Christ Church at Kapolei	Jesus Christ Latter-Day Saints
Church of Jesus Christ of Latter-Day Saints ‘Ewa Beach	Kahua Baptist Church (Seagull Schools)
Church of Jesus Christ of Latter-Day Saints	Kapolei Seventh Day Adventist ‘Ewa Beach
‘Ewa Beach Assembly of God	Kapolei Seventh-Day Adventist
‘Ewa Beach Church of God	Kapolei United Methodist Mission (Barbers Point Elementary)
‘Ewa Beach Church of the Nazarene	Makakilo Baptist Church
‘Ewa Beach United Methodist	Makakilo-Kapolei Lions Club
‘Ewa Community Church	Messiah Lutheran
Friendship Bible Church	Murray Lester Rá
Gospel Light House	New Hope Kapolei
Hawai‘i Shigisan Church	Our Lady of Perpetual Help
Healing Waters Church Honokai Hale	Soroptimist International of West O‘ahu
Hope Chapel Kapolei	St. Jude Catholic Church
Hope Chapel Kapolei Foursquare	Trinity Leeward Covenant Church
Hope Chapel Westside	Victory Baptist Church
II. Fort Weaver Road to Aloha Stadium - Churches	
Aiea Korean United Methodist	Hawai‘i Church of God State Office
Aiea Seventh-Day Adventist	Hawai‘i Fellowship
Aloha Christian Fellowship	His Highest Praise-Filipino
Amazing Grace Ministries	His Name is Jesus Tab.
Antioch Baptist Church Hawai‘i	Iglesia Ni Cristo
Believers Christian Fellowship	Iglesia Ni Cristo
Bethany Assembly of God	Jehovah’s Witnesses
Bethel Chapel Assembly of God Church	Jesus Cares Ministries
Bible Baptist Church	Jesus Christ Latter Day Saints
Brethren of Christ International	Jesus Reigns Ministries
Calvary Chapel Pearl Harbor	Joy of Christ Lutheran Church
Church of Christ at Waipahu	Kahikuonalani United Church
Church of God Prophecy	Koinonia Christian Center
Church of Jesus Christ of Latter-Day Saints	Konko Mission of Waipahu
City of Refuge Christian Center	La Luz Del Mundo

Table C-5. Cultural Sites (Continued)

II. Fort Weaver Road to Aloha Stadium – Churches (Continued)	
Faith Bible Church	Lanakila Baptist Church
Faith Christian Fellowship	Leeward Community Church
Filipino Christian Fellowship	Leeward Korean Methodist
Filipino United Church-Christ	Liberty Baptist Church
First Baptist Church	Liberty Christian Fellowship
First Baptist Church	Liberty Christian Fellowship
Grace Bible Church	Lighthouse Outreach Center
Grace Bible Church Pearl Side	Messenger of the Light Church
Grace Bible Church West Oʻahu	New Anointing Christian
Grace Fellowship & Christian	New Hope Christian Fellowship
Guerra Gabriel	New Hope Leeward
Hallelujah Assembly of God	New Hope Pearl Community
New Wine Assembly of God	St. Nicolas Episcopal Church
New World Church -The Lord	St. Timothy's Episcopal Church
Newtown Church of God	Tabernacle of Praise
Ocean View Bible Chapel	Tentoku Jodo Mission of Hawaiʻi
Our Family Christian Church	Trinity United Methodist Church
Our Lady of Good Counsel	Upon this Rock Church
Palisades Baptist Church	Victory Ohana Prison Church
Palisades Community Chapel	Waipahu Church of Christ
Pearl City Community Church	Waipahu Community Baptist Church
Peniel Pearl Gates	Waipahu Free Will Baptist
Potter's House Christian	Waipahu Full Gospel Chapel
Prayer Center Cogic	Waipahu Seventh-Day Adventist
Prayer Center of the Pacific	Waipahu United Church of Christ
Redeemer of the Lord	Way of Truth Church
Salvation Army	Wellspring Covenant Church
St. Barnabas Episcopal Church	West Oʻahu Christian Church
St. Elizabeth Church (Aiea)	Wings of Love Samoan Assembly
St. Joseph Waipahu	
IV. Middle Street to Iwilei - Churches	
All People Mission Church	Kaumakapili United Church of Christ
All People Mission Church/Korean Baptist Church	Kawaiahaʻo Church
Hawaiʻi First Samoan Assembly of God	Kawaiahaʻo Church.
Higashi Hongwanji Betsuin	Koboji Shingon Mission
Jikoen Temple	Kotohira Jinsha, Daizaifu Tenmangu
Kalapu Taulanga Matai Tofe Tonga	Samo-Tokelau Seventh Day Adventist Church

Table C-5. Cultural Sites (Continued)

IV. Middle Street to Iwilei - Churches (Continued)	
Kalihi Union Church	St. Elizabeth's Episcopal Church
Kauluwela Salvation Army Mission	Tensho Kotai Jingu Kyo Hawai'i Dojo
Kaumakapili Church	The Jesus Christ Mission Church (not Hawai'i First Assembly
V. Iwilei to UH Mānoa - Churches	
Aldersgate United Methodist Church	Healing Stones
Baptist Center	Higashi Hongwanji Mission
Bible Institute of Hawai'i	Honolulu Church of God
Central Union Church	Honolulu Church of Light
Church of Jesus Christ of LDS (Mormon)	Hope Chapel South Shore
Church of the Crossroads	Hope Chapel Westside
Church of the Crossroads	Institute of Religion (Mormon)
Door of Faith Church & Bible School	Izumo Taishakyo Mission (Historic)
First Baptist Church	Jodo Mission of Hawai'i
First Chinese Church of Christ	Kehilat Ha Melech- Messianic Jewish Congregation
First Chinese Church of Christ	Kingdom Hall of Jehovah's Witnesses
First United Methodist	Knights of Pythias
First United Methodist Church	Kehilat Ha Melech- Messianic Jewish Congregation
Grace Chapel	Kingdom Hall of Jehovah's Witnesses
Harris United Methodist Church	Knights of Pythias
Hawai'i Jae-Il Church	Korean Presbyterian Church
Hawai'i Jae-Il Church	Lamb of God Church
Hawai'i Ishizuchi Jinja (shrine)	Shinnyo-en Hawai'i
LL Gospel Church O'ahu	Shinnyo-en Temple
Makiki Christian Church & Preschool	Shinshu Kyokai Temple
Mo'ili'ili Hongwanji Mission	Shinyo En
Mo'ili'ili Hongwanji Mission	St. Augustine Church
Olivet Baptist	Tenrikyo Honolulu Ko/Tenrikyo Temple
Olivet Baptist Church	Tenrikyo Taiheyo Church
Our Redeemer Lutheran Church	The Brotherhood of Kewalo Holy Ghost
Saint Andrew's Cathedral (Historic)	The True Jesus Mission Church of the Latter Rain
Saint Mary's Episcopal Church	Waikīkī Baptist Church
Saint Peter's Episcopal Church	Waikīkī Community Center Chapel
Saints Peter & Paul Catholic Church	Wesley Foundation-Methodist & Lutheran
Shingonshu Hawai'i Betsuin	Word of Life
Hawaiian Mission Elementary & Intermediate School & Seventh	

Table C-5. Cultural Sites (Continued)

I. Kapolei to Fort Weaver Road – Cemeteries and Burial Sites	
ʻEwa Community Cemetery	
IV. Middle Street to Iwilei - Cemeteries and Burial Sites	
Sunset Memorial Park	Kawaihao Church Cemetery
V. Iwilei to UH Mānoa - Cemeteries and Burial Sites	
Oʻahu Cemetery	Hawaiʻi State Veterans Cemetery
Moʻiliʻili Cemetery	Burial Mounds (3)
King Street Catholic Cemetery	
Hawaiʻi Memorial Park Cemetery	

Source: Cultural Technical Report, 2006